

## CENTRAL INTELLIGENCE AGENCY

## INFORMATION REPORT

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SECURITY INFORMATION

25X1

COUNTRY Bulgaria

REPORT

SUBJECT 1. Hydroelectric Plants  
2. Thermoelectric Plants

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25X1

PLACE ACQUIRED

REFERENCES

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This is UNEVALUATED Information

THE SOURCE EVALUATIONS IN THIS REPORT ARE DEFINITIVE.  
THE APPRAISAL OF CONTENT IS TENTATIVE.  
(FOR KEY SEE REVERSE)

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1. The large number of power plants under construction are the primary factor for the vast power program of Bulgaria's mechanical, chemical, and textile industries and for the electrification of the country's rail network.
2. For a map showing the locations of power plants in Bulgaria, see Appendix A, pages 50, 51, 52, and 53.

## HYDROELECTRIC PLANTS

Hydroelectric Plants Under Construction

3. The hydroelectric central at Devia (N 41-45, E 24-24), Autumn 1950:
  - a. Construction work was begun in April 1950 and is scheduled for completion in 1953.
  - b. The central is to have three plants and a total input of 10,000 kilowatts.
  - c.   two turbines, manufactured and supplied by Czechoslovakia, were received in the spring of 1951. A third turbine is to be imported from Czechoslovakia.

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25 YEAR RE-REVIEW

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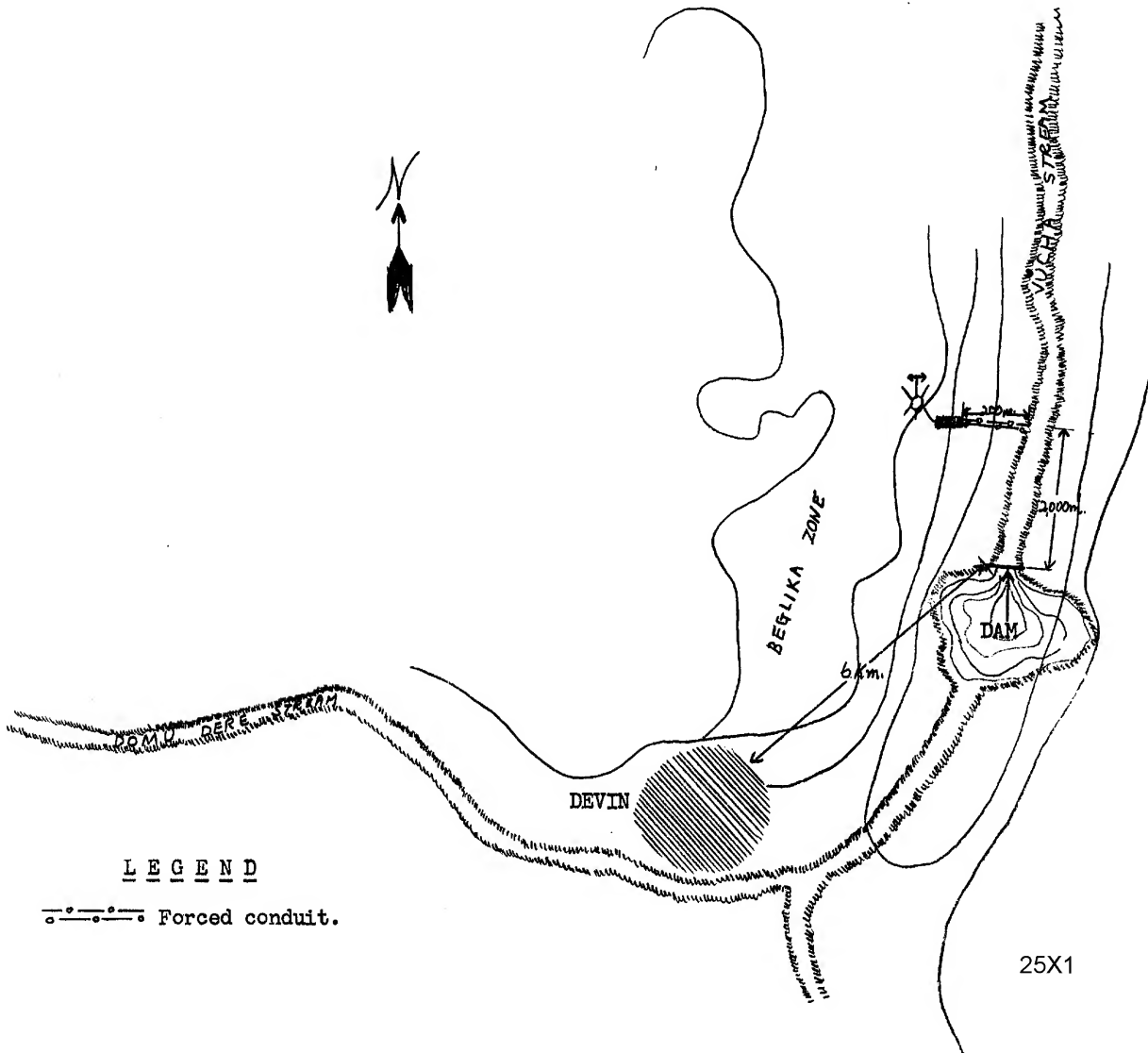
(Note: Mark Distribution Indicated By "X"; Field Distribution By "#".)

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- d. The dam is to be perpendicular to the direction of the stream. The current of the stream at this point is slow. [ ] the foundation is seven meters deep. 25X1
- e. A retaining wall of rows of poles is being laid around the artificial basin upstream of the dam. 25X1

LEGEND

-o--o--o-- Forced conduit.

- f. [ ] the derivative canal which is to be located 1,800 to 2,000 meters downstream of the dam. Two Mannesmann tubes have been received for inserting into the underground course of 150 meters to the plant building. The tubes have an inner diameter of 1.10 meters.
- g. The plant building will be approximately 70 by 40 meters in size and will be located approximately 2,000 meters downstream of the dike and 200 meters west of the left bank of the river.

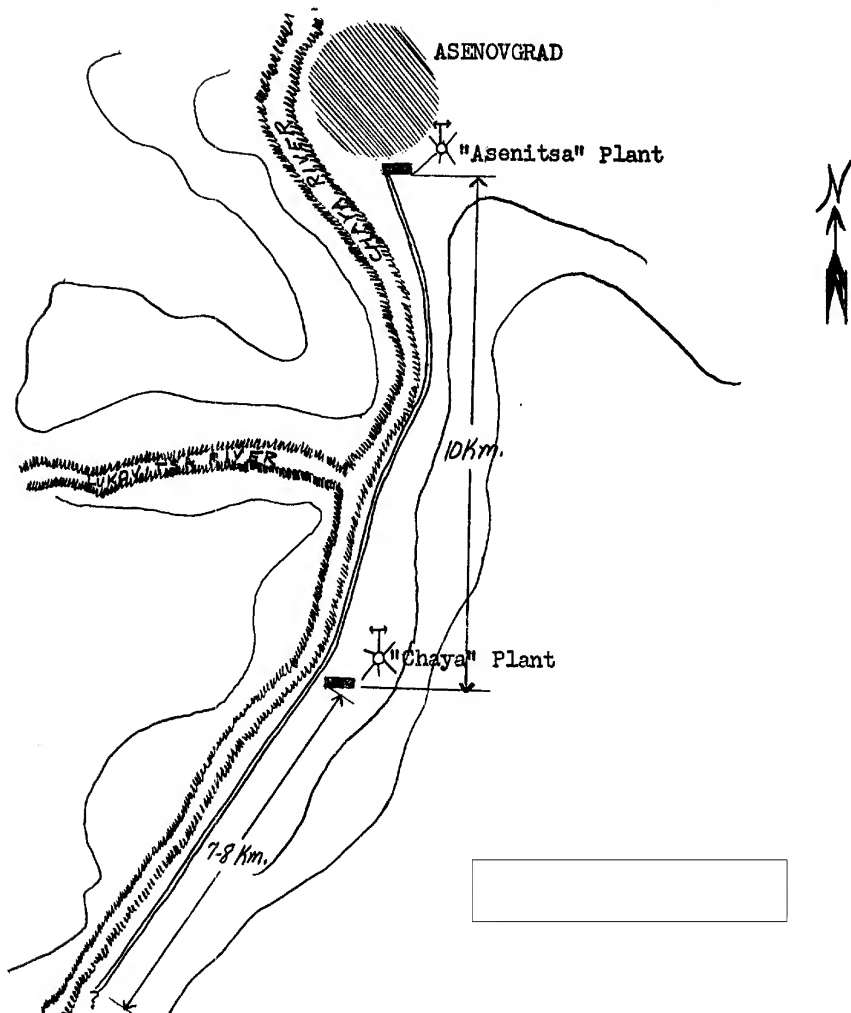
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25X1

- h. The foundations of the dam and the plant building have been completed. Excavation work has just started on the forced conduit tunnel and on the dam, the artificial basin, and the retaining wall of the basin.
- i. The work is conducted by a hydraulics construction section subordinate to the Ministry of Electrification. Nikola Panazhotev, [ ] engineer, directs the project. 25X1
- j. Construction personnel consists of 400 Trudovaks and 100 civilian workers.
- k. Transportation facilities consist of a temporary narrow-gauge rail line, 50 centimeters, which has cars of 0.75 and 1.25 cubic meter capacities and five or six motor vehicles belonging to the Trudovaks.
- 4. The hydroelectric central at Asenovgrad (N 42-01, E 24-52), Spring 1951:
  - a. Work was begun in 1947 and is scheduled for completion at the end of 1951; the plan for this central was drawn up in 1940.
  - b. The "Asenitsa" plant is to have a capacity of 25,000 kilowatts and the "Chaya" plant is to have an input of 18,000 kilowatts. 25X1
  - c. [ ] the position or characteristics of the dam. [ ] a derivative canal leads out to feed the two plants. 25X1



25X1

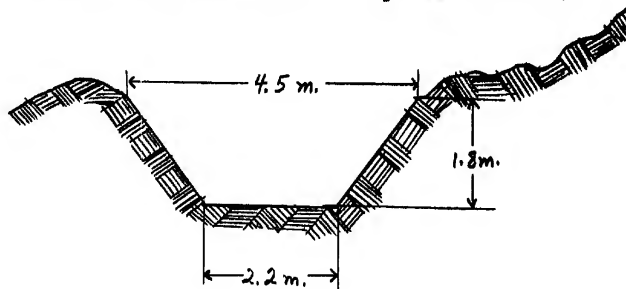
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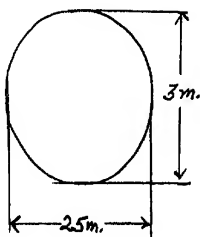
- d. The derivative canal runs along the hillside 60 or 70 meters above the bed of the Chaya River, immediately east of the river. [ ] the length of the first part of this canal, from the dam to the "Chaya" plant [ ] to be more than seven or eight kilometers. This section proceeds alternately in the open air and in three tunnels which vary between 100 and 170 meters in length. The second section, from the "Chaya" plant to the "Asenitsa" plant, is eight to 10 kilometers long and proceeds along the hillside, sometimes in the open and sometimes in tunnels. A total of six tunnels are located along this section, varying between 90 and 400 meters in length.

Derivative canal detail -- open air section



25X1

Derivative canal detail -- tunnel section



- e. The plant buildings will be approximately 40 meters by 80 meters in size and one story high.
- f. [ ] the primary high power line which goes out from the "Asenitsa" plant to the Krumovo (N 42-05, E 24-48) area is located approximately 4,500 meters west of Katunitsa (N 42-05, E 24-51). The pylons are iron trellises which have pyramid shapes with quadrangular sections.
- g. The plants, as far as the buildings are concerned, are already completely finished. The derivative canal, in the open and in the tunnels, is also completed along its entire route.
- h. The work is being carried out by a hydraulics construction section subordinate to the Ministry of Electrification.
- i. Work personnel consists of 2,000 Trudovaks, 1,000 to 1,200 civilian laborers, and 200 to 300 political prisoners.
- j. [ ] the mechanical equipment is absolutely inadequate and that all the various jobs are being done by hand.

25X1

25X1

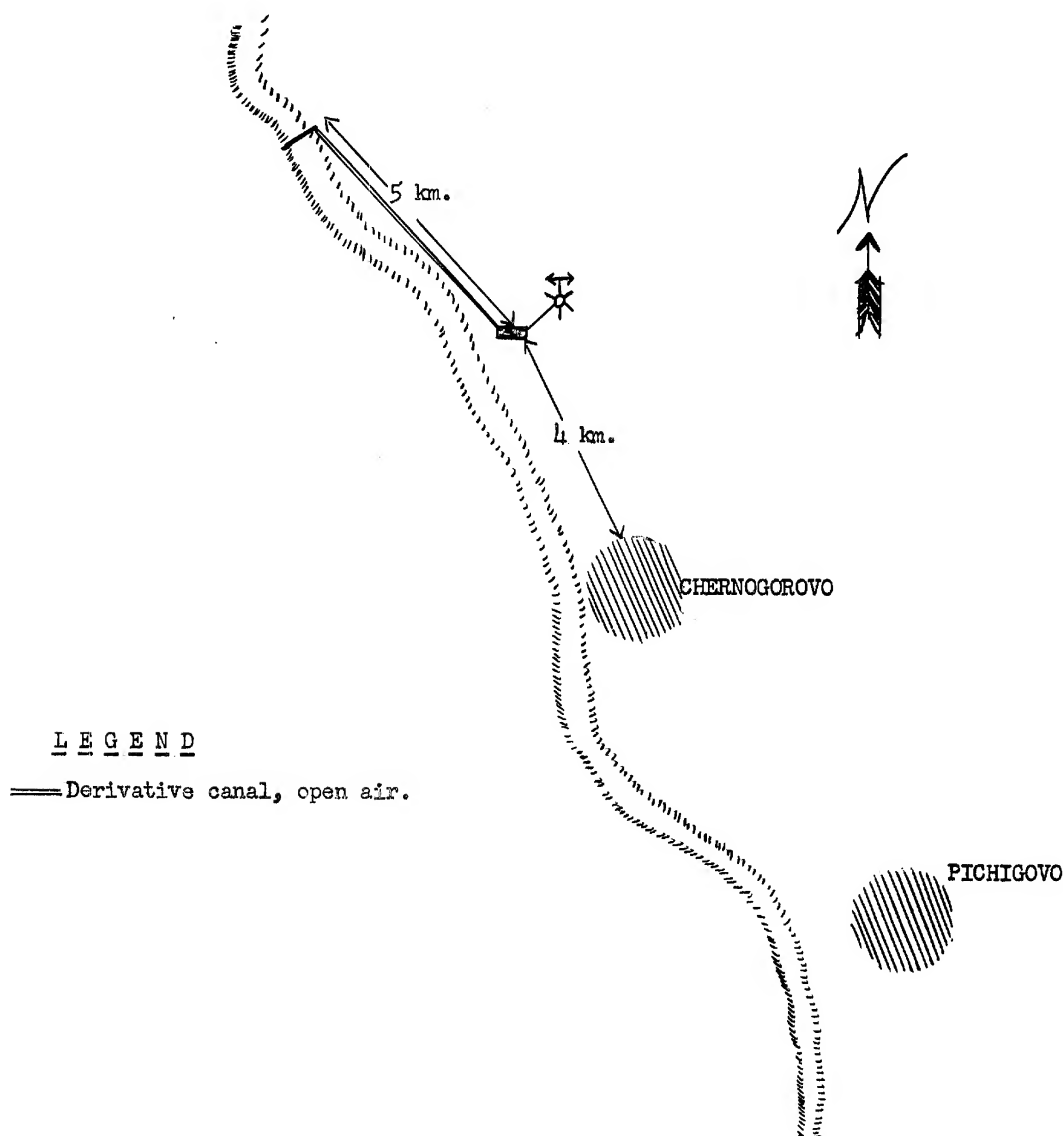
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5. The hydroelectric central at Chernogorovo (N 42-16, E 24-24), Autumn 1949:
- Construction was begun in 1947 but was suspended in 1949 because of a lack of funds. 25X1
  - The central is to have an ~~input~~ of 20,000 kilowatts. 25X1
  - The dam is to be perpendicular to the direction of the stream. Its wall, which will be of stone masonry, will be 30 to 40 meters long at the top. 25X1
  - The derivative canal is inserted into the dam, with a pressure-regulating building which has iron water gates. The canal runs in the open on the hill-side; in the immediate vicinity of the plant, the canal is approximately 60 meters above the river-bed. The canal has a length of four or five kilometers.



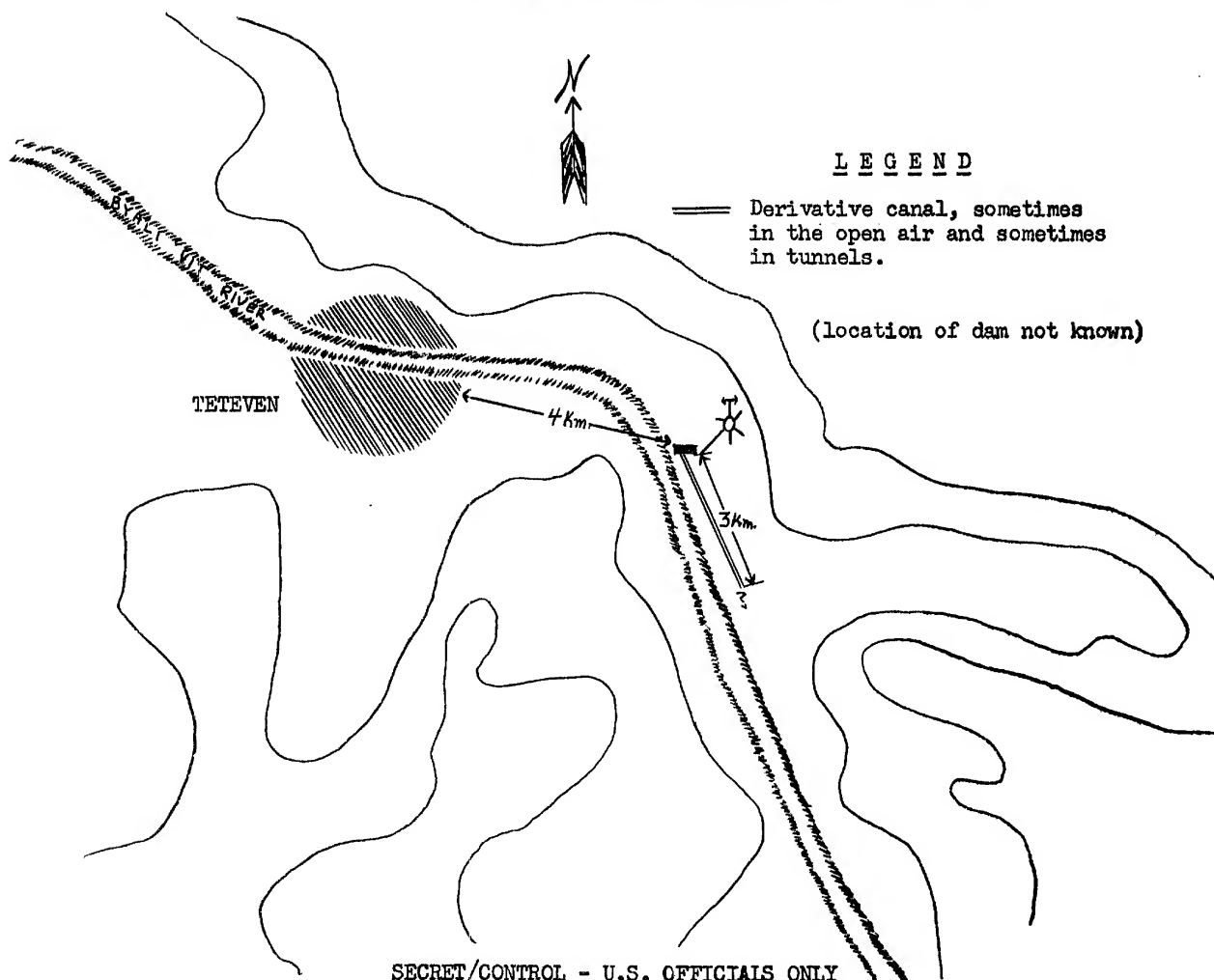
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25X1

- e. The dam and the derivative canal are finished and the foundation of the plant building has been completed.
  - f. The work, until its suspension, was carried out by a hydraulics construction section subordinate to the Ministry of Electrification.
  - g. Dimităr Gilen, [redacted] engineer [redacted] was director of the project. 25X1
  - h. Kramorov (fnu), [redacted] engineer was responsible for work performance. Kramorov is a naturalized Russian who emigrated to the USSR in 1931.
  - i. Work personnel consisted of 150 Trudovaks and 300 civilian laborers.
  - j. There was absolutely no mechanical equipment. All work was carried out by hand.
6. The hydroelectric central at Teteven (N 42-54, E 24-16), Summer 1949:
- a. Work was begun in 1946 and is scheduled for completion at the end of 1952.
  - b. The central will have an input of 30,000 kilowatts.
  - c. The machinery has been received [redacted] 25X1
  - d. [redacted] the location or characteristics of the dam.



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25X1

- e. [ ] one section of the derivative canal, which has a length of two or three kilometers. It is five meters wide, approximately two meters deep, faced in stone masonry, and reinforced with maltha cement. The section [ ] runs in the open and through three tunnels, the largest of which has a length of 100 to 120 meters. There are also two canal bridges between 180 and 200 meters long. In the immediate vicinity of the plant, the derivative canal is 35 or 40 meters above the river bed. 25X1
- f. The plant building will be a 1-story construction approximately 40 by 30 meters in size. 25X1
- g. The derivative canal is almost completed and the foundation has been completed.
- h. The work is conducted by a hydraulics construction section subordinate to the Ministry of Electrification.
- i. Ivan Khinchev, [ ] engineer, is the director of the project. 25X1
- j. Labor personnel consists of 400 Trudovaks and 400 civilian workers.
- k. Transportation facilities include a temporary narrow-gauge line one to two kilometers long, private carts drawn by quadrupeds, and "scme" motor vehicles.
7. The hydroelectric central at Karlovo (N 42-38, E 24-49), Spring 1950:
- a. Construction was begun in 1949 and is scheduled for completion at the end of 1952.
- b. [ ] power input [ ] would be greater than 25,000 kilowatts. 25X1
- c. The dam is of stone masonry reinforced with maltha cement. It is perpendicular to the direction of the stream and is inclined. Its length is 20 meters, its height eight to nine meters, its width six meters at the top, and width at the bottom unknown.
- d. [ ] the derivative canal [ ] the nature of the terrain indicates that it will be in the open. 25X1
- e. The plant building is located approximately 1,800 meters downstream of the dam, on a hillside, 10 or 15 meters above the bed of the Suchuruma (Sushitsa?) River.
- f. The dam is in the process of completion and the power plant has already been completed.
- g. Work is being carried out by a hydraulics construction section subordinate to the Ministry of Electrification.
- h. Dimitŭr Makedonski, [ ] engineer, is responsible for work performance. 25X1
- i. Labor personnel consists of 400-500 Trudovaks and 100 civilian workers.
- j. Transportation facilities consist of private vehicles, for which rent is paid according to tonnage. [ ] the number of auto vehicles is completely inadequate. 25X1

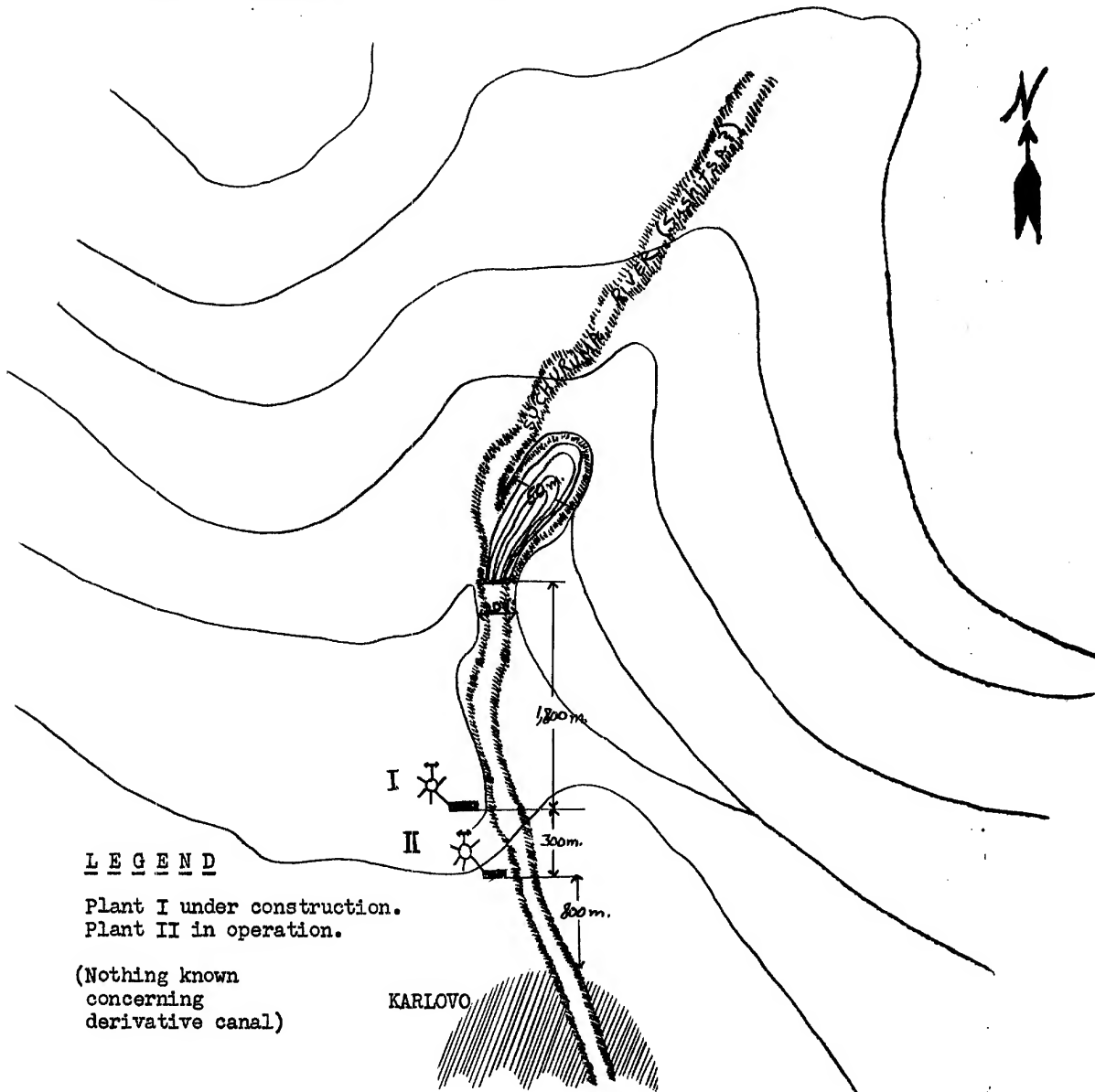
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25X1

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k. Sketch of the Karlovo plant area:



8. The hydroelectric central at Belene (N 43-40, E 25-06), Autumn 1950:

a. Work was begun in 1947 and is scheduled for completion by the end of 1951.

b. [REDACTED]

25X1

c. The dam will be perpendicular to the stream. It will have stone masonry walls with maltha cement reinforcement, and will be approximately 30 meters long at the top. It is furnished with a waste pipe and pressure-regulating building which has iron water gates. [REDACTED]

25X1

25X1

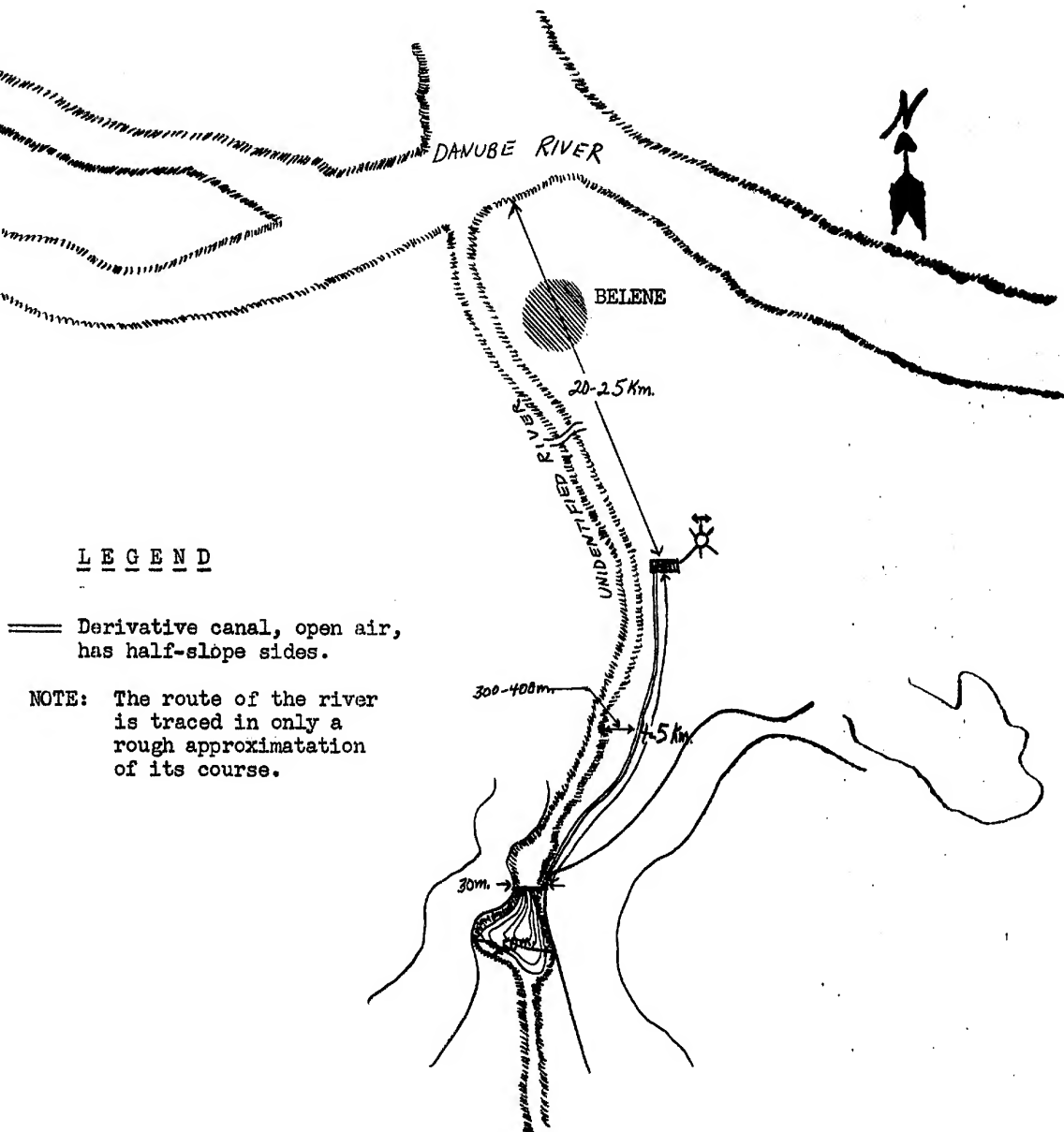
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- d. The water backs up into a natural basin which is 200 to 250 meters wide at a distance of 200 meters from the dam.



- e. The derivative canal reaches the plant through a course four or five kilometers long. It is approximately six meters wide, and is in the open at all times; it is halfway up the hill and is lined with stone masonry.
- f. The plant building is one story high, with a 4-sloped shed roof of Marseilles-type tile.


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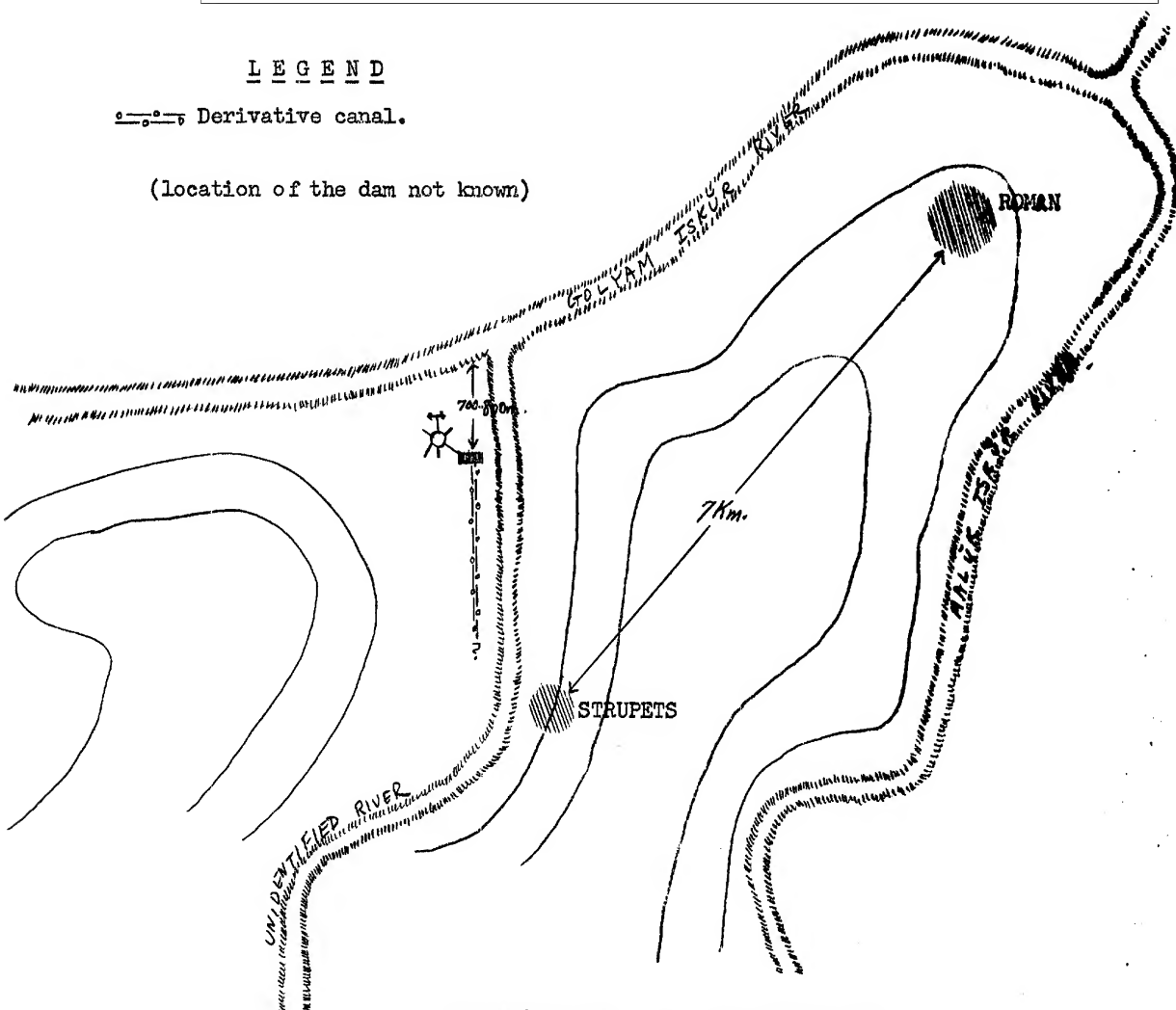
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25X1

- g. The dam is in the last stages of construction. The derivative canal is being constructed, and the power plant is completely finished in regard to the actual building.
  - h. Work is carried out by a construction section subordinate to the Ministry of Electrification.
  - i. Labor personnel consists of 2,000 to 3,000 political prisoners, many of whom are technical personnel, and 100 civilian workers, the majority of whom are skilled workers.
  - j. Transportation equipment consists of private vehicles rented according to tonnage.
  - k.  automatic machinery. Work is done by hand. 25X1
9. The hydroelectric central at Strupets (N 43-08, E 23-53), July 1951:
- a. Construction was begun in 1947 and is scheduled for completion in 1951.
  - b. The central is to have an input of 18,000-22,000 kilowatts.
  - c.  25X1

LEGEND
 Derivative canal.

(location of the dam not known)



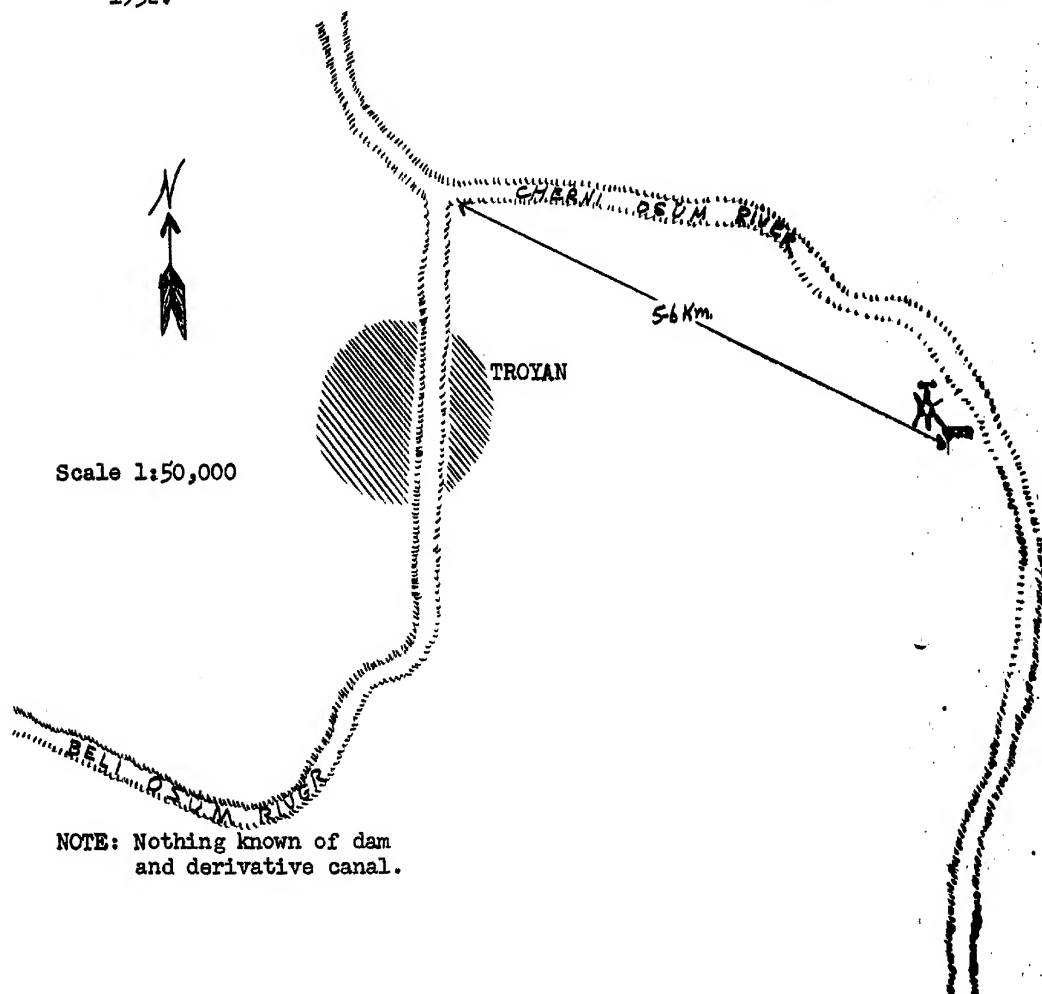
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25X1

- d. The central is to be fed by a forced conduit (details lacking) which, in relation to the terrain, is allegedly to have a slope of 0.45 by one meter.
  - e. The plant building is to be one story high with a shed-type (peaked) roof.
  - f. [ ] the plant building is in the process of completion, but 25X1 could furnish no further information concerning installations.
  - g. The labor personnel consists of a hydraulics construction section subordinate to the Ministry of Electrification.
  - h. Georgi Dimitrov, [ ] engineer, is in charge of the construction. 25X1
  - i. Labor personnel consists of 300 to 500 political prisoners and 200 civilian workers.
  - j. Transportation facilities include a temporary narrow-gauge line and private vehicles.
10. The hydroelectric central at Troyan (N 42-53, E 24-42), June 1951:
- a. Construction was begun in 1949 and is scheduled for completion at the end of 1952.



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25X1

b. [ ] the power capacity, [ ] would be less than 30,000 kilowatts. 25X1

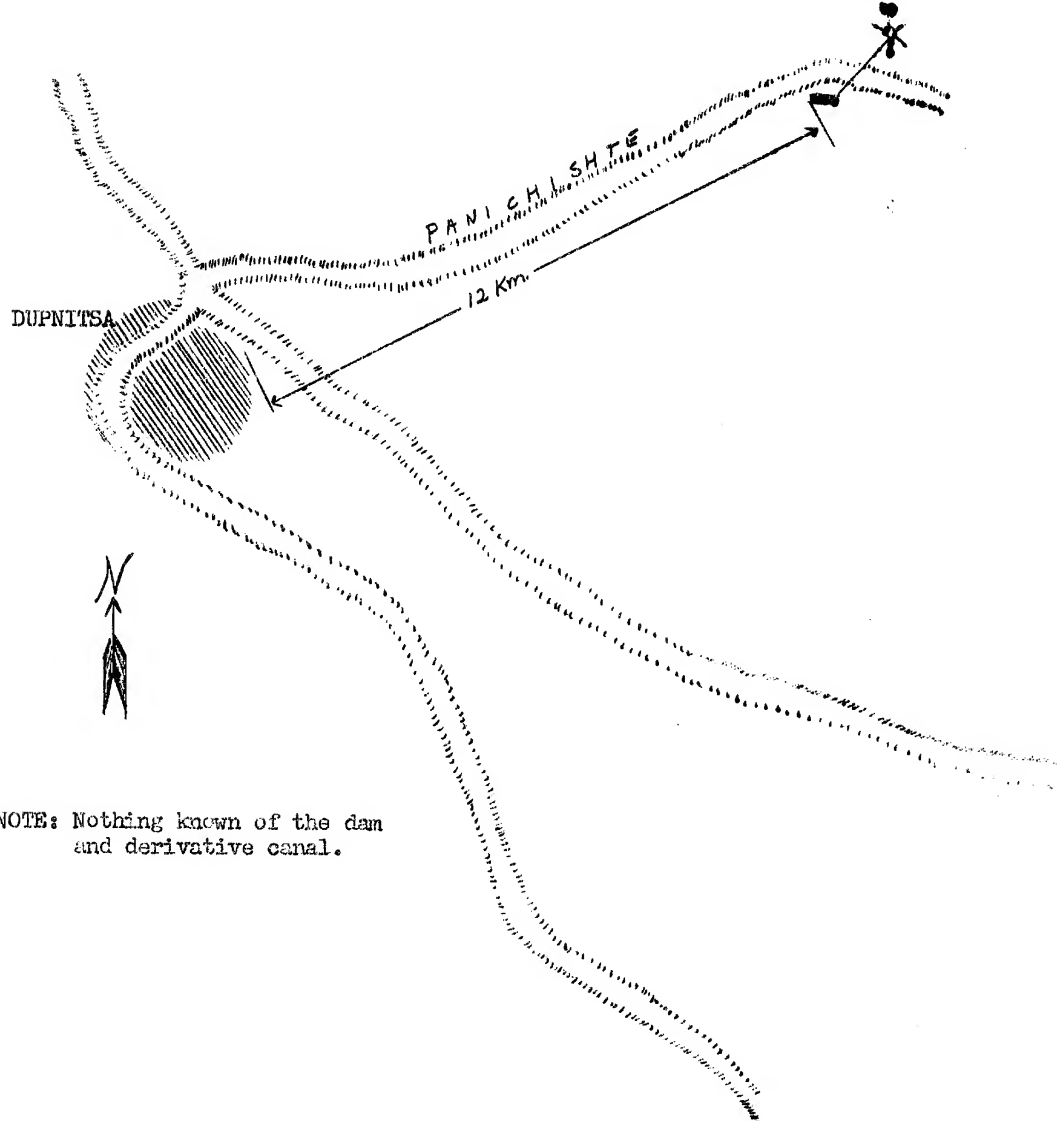
c. [ ] 25X1

11. The hydroelectric central at Toros (N 43-06, E 24-16), July 1951:

- a. Construction was begun in 1950 and is scheduled for completion in 1953.
- b. The plant will have an input of 20,000 kilowatts and is to be located three kilometers from the village.

12. The hydroelectric central at Panichishte (probably near Gorna Banya, N 42-17, E 23-16 or possibly near Krainitsi, N 42-19, E 23-12), July 1951:

- a. Construction was begun in 1948 and is to be finished during 1953.



NOTE: Nothing known of the dam and derivative canal.

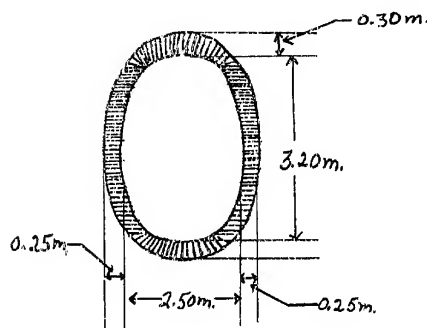
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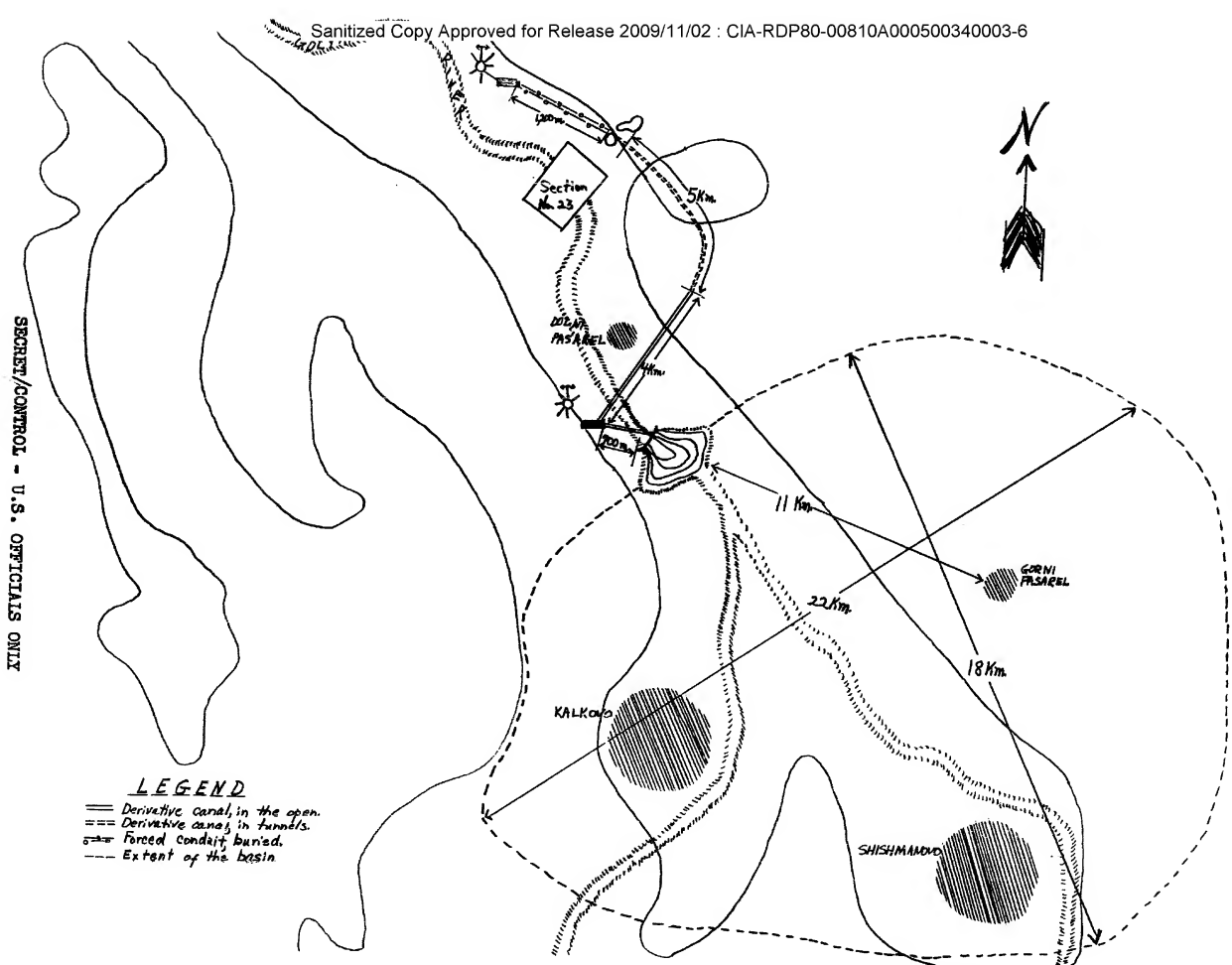
25X1

- b. The plant will have an input of 30,000 kilowatts.
  - c. The project is being carried out by a hydraulics construction section subordinate to the Ministry of Electrification.
  - d. Nikola Abadzhiev, [ ] engineer, is in charge of the construction. 25X1
13. The hydroelectric central at Gornj Pasarel (N 42-29, E 23-35), July 1951:
- a. Construction of these plants was begun in 1948 and is scheduled for completion in 1955.
  - b. Plant I is to have an input of 120,000 kilowatts and Plant II is to have an input of 50,000 kilowatts.
  - c. The dam has a convex axis, with the convexity turned toward the mountain. The length at the top is 180-200 meters and the length at the base is 30-35 meters. The height at the center is 120 meters, and the thickness of the foundation is 25 meters.
  - d. The basin is to have a capacity of 620,000,000 cubic meters of water, a width at the plant of 1.8 kilometers, and a length of 22 kilometers. The villages of Gornj Pasarel, Kalkovo, and Shishmanovo are to be submerged by the lake.
  - e. The derivative canal will be inserted into the dam with a pressure-regulating building which has iron defenses. It will feed the first plant and, after this, appears to proceed along its course until it enters a forced conduit which in turn feeds the second plant. The tunnel is apparently polycentric (sic) with cement reinforcement: upside-down arc, 0.25 meters thick; supports, 0.25 meters thick; and vault, 0.30 meters thick. The tunnel is 2.50 meters wide at the center and 3.20 meters high at the center.



- f. A loading room (details unknown) is located at the end of the derivative canal, into which is inserted the forced conduit of two Mannesmann tubes which have an internal diameter of 0.90 meters and a thickness of 16 millimeters and two Mannesmann tubes which have an internal diameter of 1.10 meters and a thickness of 16 millimeters. This forced conduit has a route of approximately 1,200 meters and a slope of 0.50 by one meter. It is filled with earth, and covered with a light layer of earth which, in relation to the tubing, forms a slight arc with the convexity rising toward the outside. The space between the pipes is 0.80 meters.

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8. Concerning the buildings only the foundations were under construction at the time of observation.

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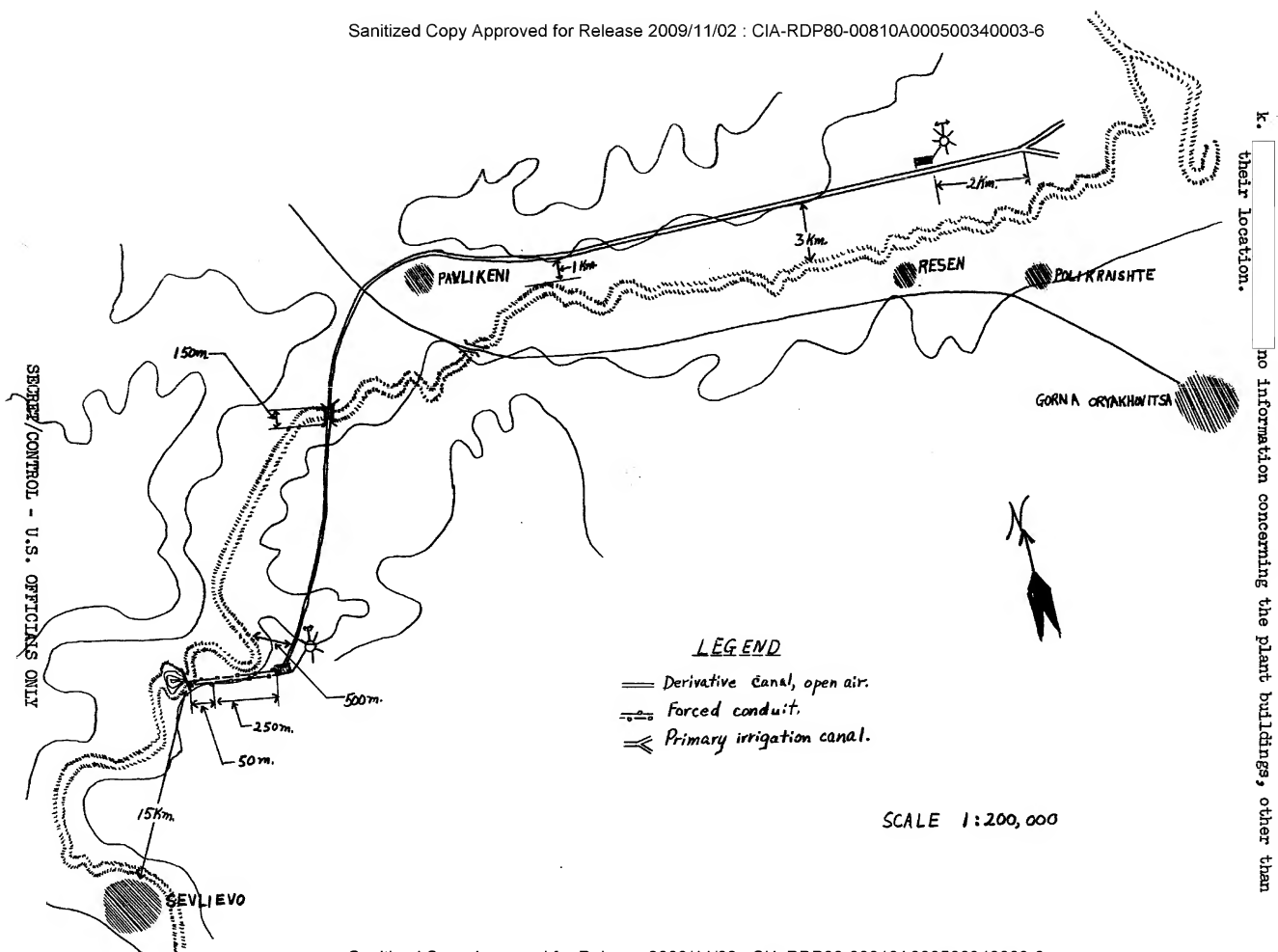
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- h. The foundation of the dam is under construction. Excavation and land preparation work is being done on the derivative canal and the forced conduit. Only the foundations were noted on the buildings.
- i. The project is being carried out by a construction section subordinate to the Ministry of Electrification.
- j. Zurevski (fnu) [ ] engineer, a Communist, is in charge of construction.
- k. Milio Lazarov, [ ] engineer, a Communist, is Zurevski's assistant. 25X1
- l. Radai Radav [ ] engineer is in charge of the construction of the derivative canal. The project is checked on, weekly, by two Soviet specialists. 25X1
- m. Labor personnel consists of 1,500 Trudovaks and 2,500 civilian workers.
- n. Transportation facilities consist of a narrow-gauge line served by four steam locomotives, and approximately 100 auto vehicles of ZIS, Mercedes, and Opel makes.
- o. For mechanical equipment [ ] approximately 20 air compressors, of three or four cranes which run on the narrow-gauge rail line, and two fixed cranes of the 1-arm, 5-ton type, of Czechoslovakian make. 25X1
14. The hydroelectric central at Gorsko Kosovo (N 43-06, E 25-11), Autumn 1949:
- a. Construction was begun in 1942, suspended during 1944 and 1945, started again in the autumn of 1945, and is scheduled for completion in 1954.
- b. Plant I will have an input of 140,000 kilowatts and Plant II will have an input of 120,000 kilowatts.
- c. [ ] 25X1
- d. The derivative canal will be inserted into the dam and, with an open air route of 50 meters, will run to a point approximately 250 meters west of Plant I where the terrain has a steep slope (80°). At the beginning of the slope is a loading room from which the forced conduit divides with a fall of approximately 250 meters to Plant I. Proceeding along its route, the canal crosses the Rositsa River through a canal-bridge 150-200 meters long and continues to Plant II.
- e. The project is being carried out by a hydraulics construction section subordinate to the Ministry of Electrification.
- f. In July 1951, Ivan Ivanov, [ ] engineer, was in charge of construction. Ivanov was mayor of Sofia from 1939 to 1944. 25X1
- g. In 1949, the technical personnel were all Bulgarians; however, in 1951, an unknown number of Soviet technicians arrived to help with the construction.
- h. Labor personnel consists of 2,000 Trudovaks, 3,500-4,000 volunteer Youth Brigade members, and 600-700 civilian workers.
- i. Transportation facilities consist of a fixed narrow-gauge line, served by steam locomotives, and an unknown number of motor vehicles.
- j. [ ] mechanical excavators and cranes fixed on tracks. 25X1

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k. [redacted] no information concerning the plant buildings, other than their location.

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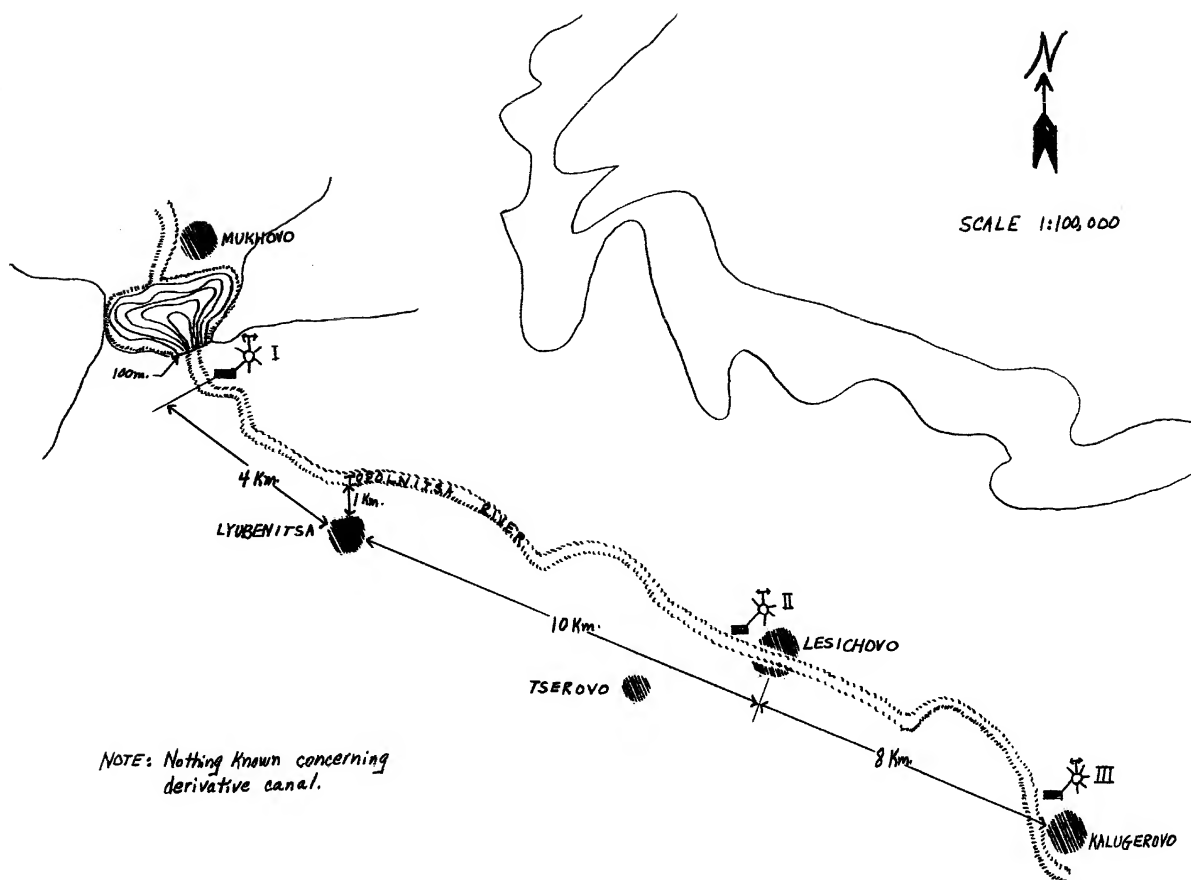
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1. The foundations of the plant buildings are completed. Preliminary work is being done on the derivative canal.
15. The hydroelectric central at Kalugerovo (N 42-18, E 24-11), Autumn 1948:
- a. Construction was begun in 1946, under contract with a Czechoslovakian hydraulics construction company. Work was suspended in 1949 because of the nationalization of the company, but it seems that work will definitely be started again in the autumn of 1951. The plans were drawn up in 1945 by Dimitur Dimitrov, [ ] 25X1  
[ ] engineer who is now chief of the project office in the hydraulics construction section of the Ministry of Electrification. 25X1
  - b. Plant I is to have an input of 125,000 kilowatts; Plant II is to have an input of 80,000 kilowatts, and Plant III is to have an input of 80,000 kilowatts.
  - c. The dam is to have stone walls enforced with maltha cement; its axis is to be perfectly perpendicular to the direction of the stream. The construction will require 800,000 cubic meters of material. [ ] no details concerning 25X1  
the exhaust-pipe, the aperture for allowing the water in the basin to return to its normal level, or the pressure building. The dam itself will be 100-200 meters long at the base, 330 meters long at the top, 25 meters wide at the base, eight meters wide plus two meters of iron quay at the top, and 84 meters high. The foundation of the dam will have a depth of 25 meters.
  - d. The basin is completely natural. It has a length of 16 kilometers and a maximum width of one kilometer. 25X1
  - e. [ ] no details concerning the derivative canal [ ] it is 25X1  
to feed all three of the above-mentioned plants.
  - f. The dam foundation has been completed, and the foundations of the plant buildings are now under construction.
  - g. The work was being done by a Czechoslovakian hydraulics construction society which was nationalized in 1949 (the time of the suspension of work). The technical personnel at that time were skilled Czechs and Bulgarians.
  - h. The labor force consisted of 1,500-1,800 Trudovaks, 300 political prisoners, and 700-800 civilian workers.
  - i. [ ]
  - j. [ ] 25X1
  - k. For a sketch of the location of the various installations at the Kalugerovo power central, see the following pages:

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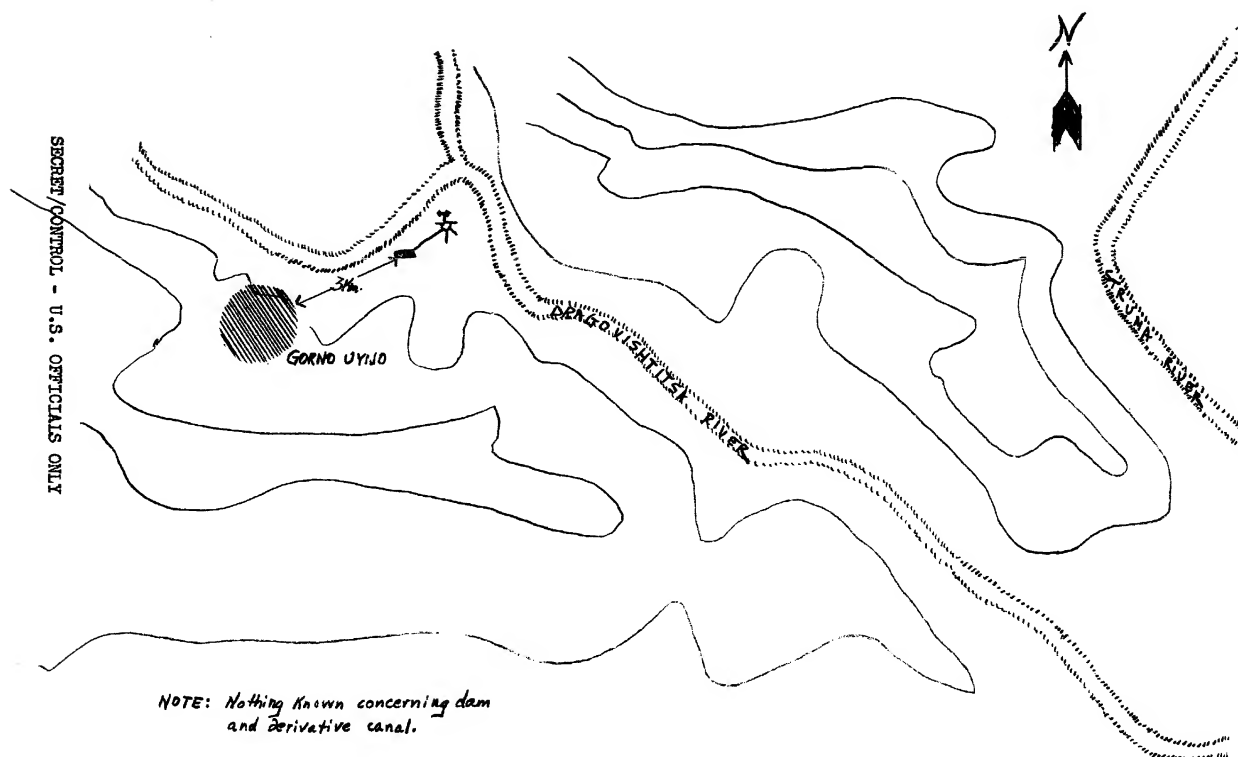
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16. The hydroelectric central at Gorno Uyno (N 42-25, E 22-34), July 1951:

a. Construction was begun in 1948 and is scheduled for completion during 1952.



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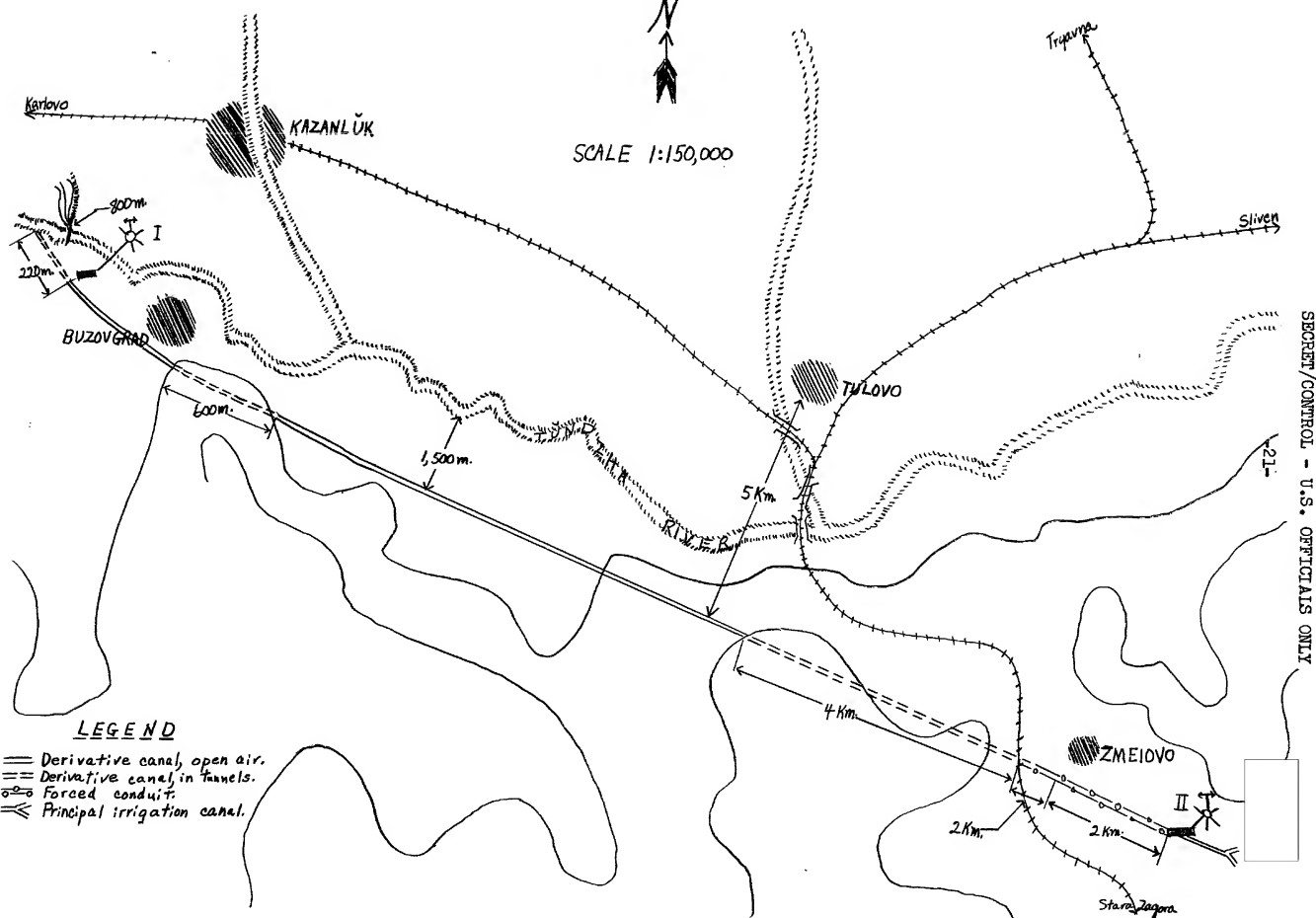
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25X1

- b. The plant is to have a capacity of 40,000 kilowatts.
  - c. The work is being done by a hydraulics construction section of the Ministry of Electrification.
  - d. Georgi Rauchev, [ ] engineer, is in charge of the construction. 25X1
17. The hydroelectric central at Bozovgrad (N 25-24, E 42-34), Spring 1951:
- a. Construction was begun in 1946 and is scheduled for completion in 1955.
  - b. Plant I is to have an input of 100,000 kilowatts, and Plant II is to have an input of 120,000-140,000 kilowatts.
  - c. The dam will have a stone wall with cut stone reinforcements with an axis perfectly perpendicular to the direction of the stream. It will be called "Georgi Dimitrov" and will be 200-220 meters long at the base, 830 meters long at the top, 85 meters wide at the base, 15 meters wide at the top, and 44 meters high. Its basin will have a retaining wall of rows of poles. [ ] the exhaust pipe and the aperture in the dam for allowing the water to return to its original level. 25X1
  - d. The pressure building is to be immediately upstream of the dam and is to have an iron defense work. The derivative canal will enter immediately into a tunnel for a distance of 220 meters, will emerge into the open air for a distance, then again into a tunnel, etc. as is shown in the sketch on the following page. [ ] the derivative canal will feed Plant I, [ ] Plant II will probably receive the water from a forced conduit which is two kilometers long. The loading canal of Plant III is to be, at this time, primarily an irrigation canal. 25X1
  - e. The foundation of the dam has been completed and work is proceeding on the wall. The tunnel of the derivative canal is being excavated, and land preparation is under way for the plant buildings.
  - f. The project is being carried out by a construction section of the Ministry of Electrification.
  - g. Kaladzhiev (fnu), [ ] engineer, is in charge of construction. 25X1
  - h. The labor force consists of 1,500-1,800 Trudovaks, 800 members (male and female) of the volunteer Youth Brigades, and 500-600 civilian workers.
  - i. Transportation facilities include a fixed narrow-gauge rail line which is located along the derivative canal. The railroad is served by four steam locomotives. Also noted were 30 Renault motor vehicles.
  - j. [ ] an undetermined number of air compressors, lime mixers, cranes etc. 25X1
  - k. For a sketch of the installations at the "Georgi Dimitrov" dam project, see the following page:

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25X1

25X1

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-23-



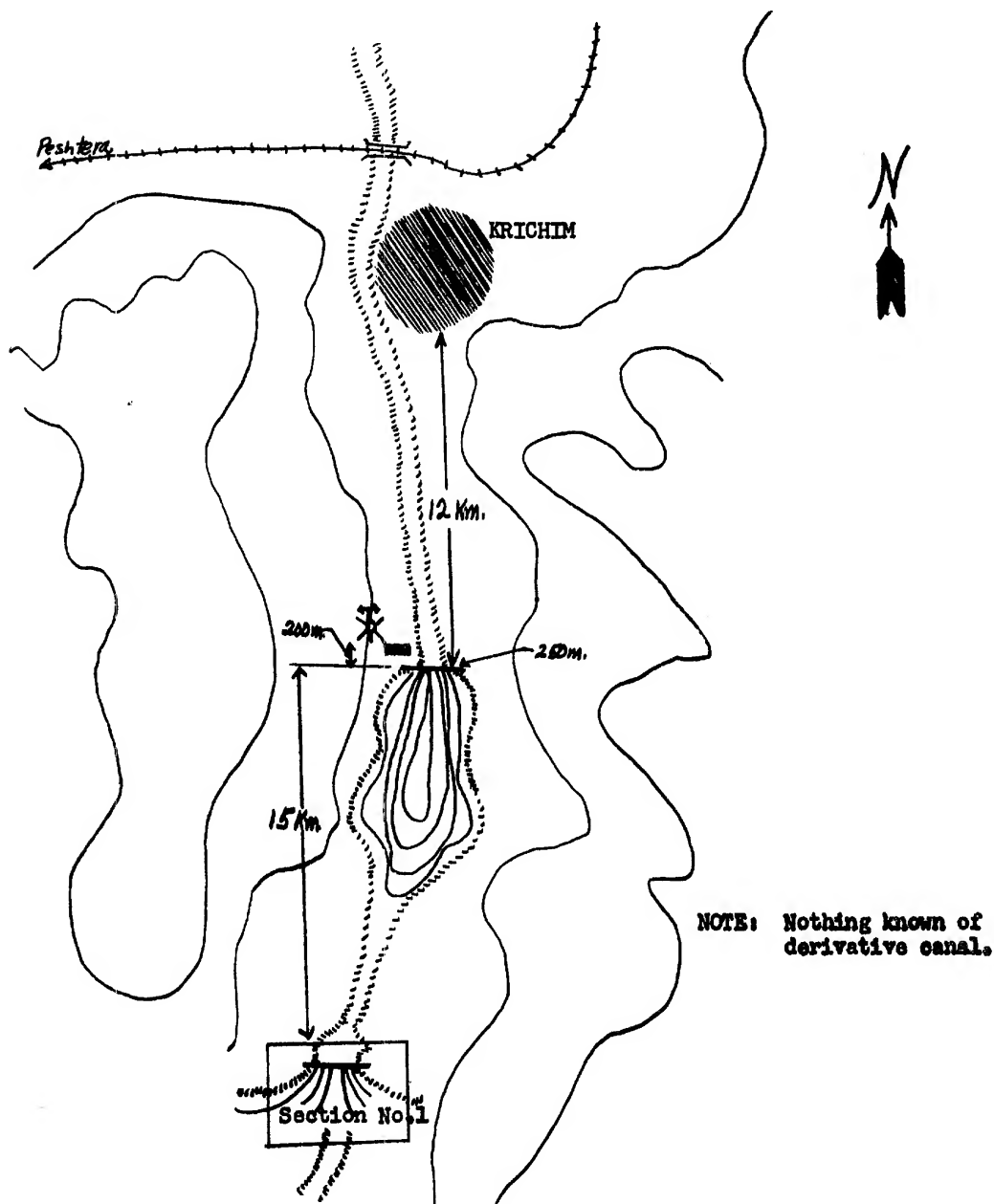
b. The plant will have capacity of 40,000-50,000 kilowatts.

19. The hydroelectric central at Krichim (N 42-03, E 24-26), August 1949:

a. Construction was begun in 1946 and is scheduled for completion in 1953. The plan was drawn up by Petur Pashev, [redacted] engineer [redacted]

25X1

25X1

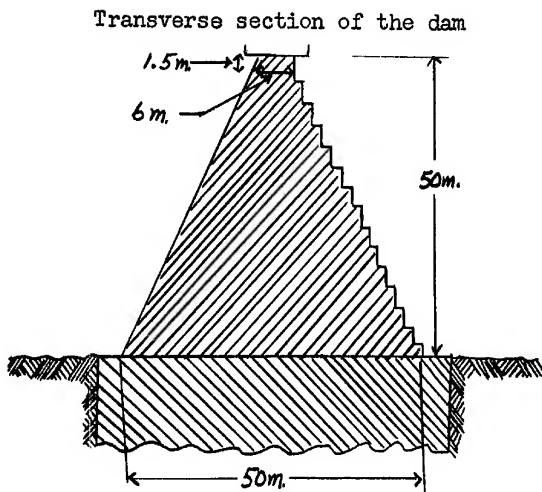


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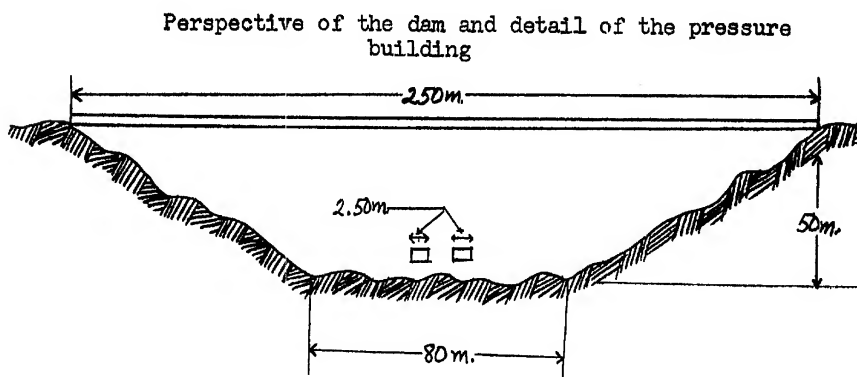
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-24-

- b. The plant is to have an input of 100,000 kilowatts.
- c. The dam is located on the river bed at a point which has a 30 percent slope. It will have stone walls with an axis perfectly perpendicular to the direction of the stream. The wall will have concrete reinforcement, while the base will be reinforced with granite blocks arranged in steps. The dam will be 80 meters long at the base, six meters wide at the top plus three meters (1.50 and 1.50) of iron quay, and 50 meters high in the middle.



- d. The basin will have a capacity of 90,000,000 cubic meters of water. An unidentified stream will empty into the basin.
- e. The pressure building is located at the base of the dam and has two quadrangular "mouths" which are approximately 2.50 meters wide. the derivative canal which, with a course of approximately 200 meters, is to carry the water to the central.



- f. The plant building is to be located approximately 200 meters downstream of the dam.
- g. The dam foundation had been laid and construction has begun on the transverse. Work is being done on a river bed which will divert the stream into the basin.

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25X1

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-25-

h. The project is being carried out by a hydraulics construction section of the Ministry of Electrification. 25X1

i. Petur Shikov, [ ] engineer who is a native of Pazardzhik, is in charge of construction.

j. The labor force consists of 400 civilian workers. 25X1

k. [ ] approximately 40 motor vehicles as well as an undetermined number of fixed cranes, lime mixers, concrete mixers, etc.

20. The hydroelectric central at Studena (N 42-32, E 23-08), July 1951:

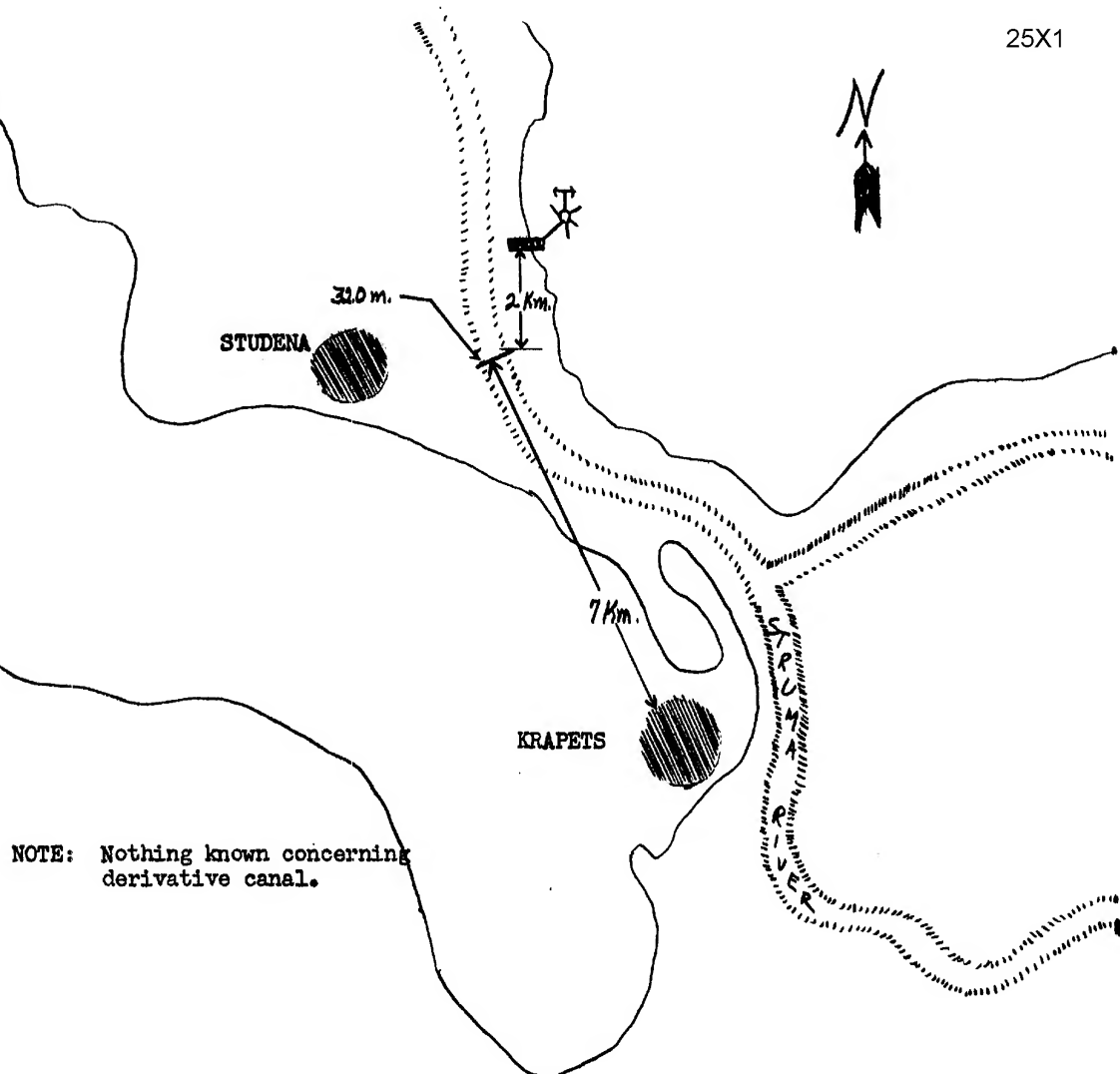
a. Construction was begun in 1947 and is scheduled for completion in 1955. 25X1

b. This plant is to have an output of 120,000 kilowatts.

c. The plant building is to be 100-120 meters from the dam. [ ]

[ ]

25X1



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25X1

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25X1

- d. The dam structure is to be [redacted] similar to that of the Lena dam in the USSR. It will consist of a wall of granite blocks or blocks of other materials. The interstices which are not derivative will be ridged in stone and maltha cement. The dam will be 85-90 meters long at the base, 320 meters long at the top, and approximately 80 meters high. [redacted]

25X1

e. [redacted]

25X1

- f. The project is being carried out by a hydraulics construction section subordinate to the Ministry of Electrification.

25X1

- g. Petur Barakov, [redacted] engineer, a Communist, is in charge of construction.

- h. The dam has been completed to a height of 30-32 meters. Only the foundation of the plant building is under way.

25X1

- i. Labor personnel consists of 800 Trudovaks and 1,000-1,200 civilian workers.

- j. Transportation facilities include a temporary narrow-gauge rail line, one aerial ropeway which has two carrying cables, and an unknown number of motor vehicles.

- k. Mechanical equipment consists of three fixed cranes, and an unknown number of air compressors, cement mixers, etc., received in May 1951 from the USSR.

21. The hydroelectric central at Karas (in the Svode N 43-01, E 23-52 area), Aut 1949:

25X1

- a. Construction was begun in 1946 and was suspended in 1950 because of the lack of funds. The plans were drawn up by Dimitur Granchiarov, an engineer [redacted]

- b. The central will have an input of 80,000 kilowatts.

25X1

- c. The dam will have stone walls with cut stone reinforcement, with the axis perfectly perpendicular to the direction of the stream. The dam will be 150-180 meters long at the base, 300 meters long at the top, 90 meters long in the middle, and 90 meters high. The difference in level between the dam and the power station is 120-140 meters.

- d. The basin will have a capacity of 120,000,000 cubic meters of water. Its length will be nine or 10 kilometers and its width at the middle will be 1,600-2,000 meters.

25X1

e. [redacted]

- f. The foundation of the dam has been completed and construction has been started. The foundation of the plant building is under way.

25X1

- g. Prior to its suspension, the project was being carried out by a hydraulics construction section subordinate to the Ministry of Electrification. Beredinos (fnu), [redacted] old engineer was in charge of construction.

25X1

- h. Labor personnel consisted of 600-700 civilian workers from the area.

- i. Transportation facilities included a temporary narrow-gauge line and an unknown number of motor vehicles.

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25X1

j. The following is a sketch of the location of the Karas power plant installations:

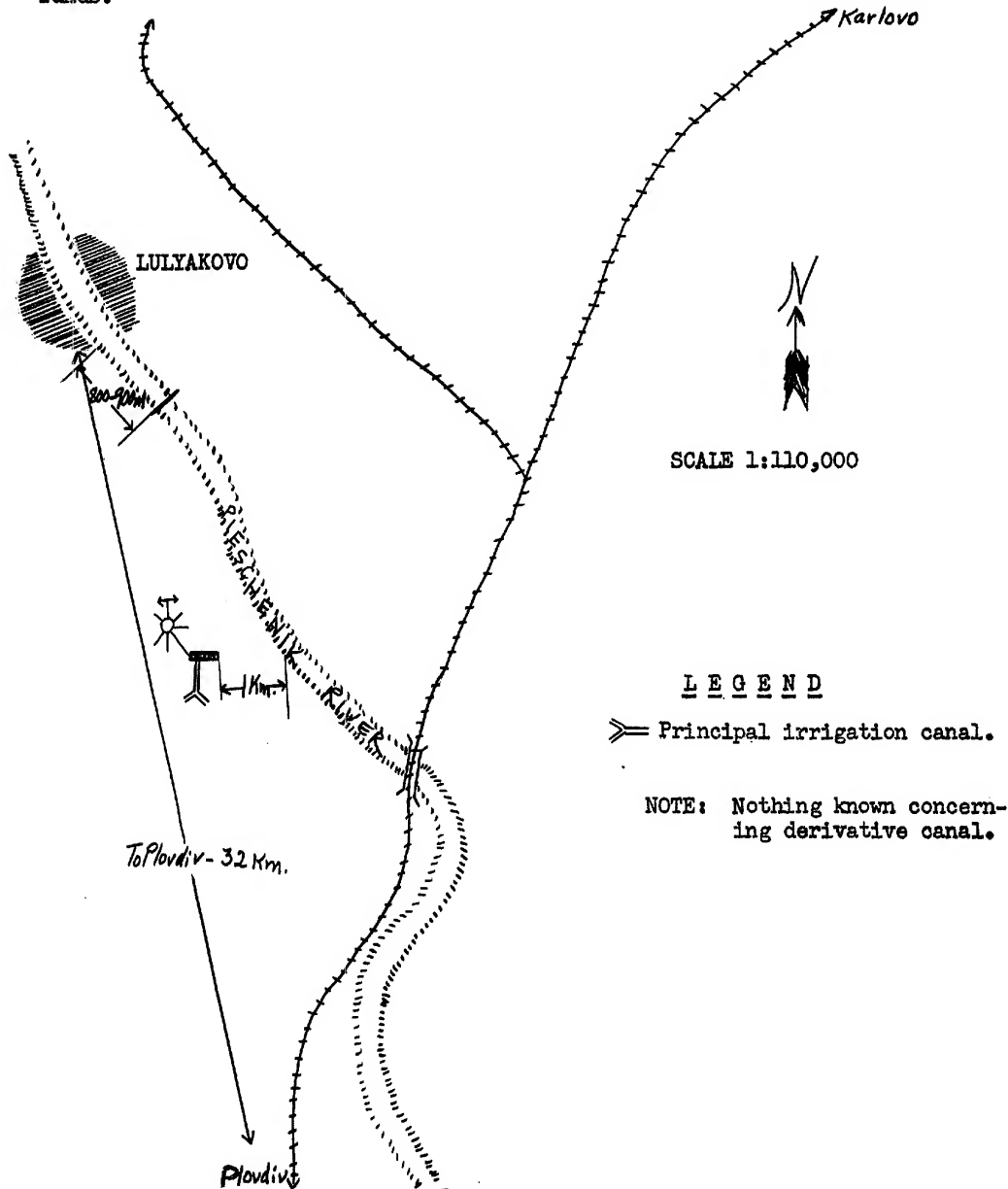


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22. The hydroelectric central at Lulyakovo (probably Panichere N 42-27, E 24-37), Autumn 1949:

a. Construction was begun in 1946 but was suspended in 1950 because of a lack of funds.



b. The plant is to have an input of 35,000-40,000 kilowatts.

c. The dam will have stone walls, with an axis perfectly perpendicular to the direction of the stream. It will be 120 meters long at the base, 180-200 meters long in the middle, 280-300 meters long at the top, and six meters wide at the top.

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- d. The basin has a natural bed and will have a capacity of 38,000,000-40,000,000 cubic meters of water. The river bed in which the basin will be established is sandy, and is called "Pieschenik" which means "sandy." 25X1
- e. [ ] the derivative canal, [ ] is to be 4,800 meters. 25X1
- f. [ ]
- g. The dam foundation has been completed, and the land was being prepared for the plant building. The derivative canal was being converted. 25X1
- h. Prior to its suspension in 1950, the project was being carried out by a hydraulics construction section subordinate to the Ministry of Electrification. 25X1
- i. Dimităr Gilev, [ ] engineer [ ] was in charge of construction. Gilev was also the director of the Chernogorovo hydroelectric central project described above. 25X1
- j. Labor personnel consisted of 250 Trudovaks, 200 political prisoners, and 400 civilian workers. A good part of the workers were periodically employed for clearing irrigation ditches in the area; because of this, the construction of the central proceeded slowly.
- k. Transportation facilities included a temporary narrow-gauge line and eight or 10 motor vehicles.
23. The hydroelectric central at Belogradchik (N 43-38, E 22-40), July 1951:
- a. The plant will have an input of 40,000-50,000 kilowatts and will be fed by the Archar River.
- b. [ ] 25X1

Hydroelectric Plants Already in Operation

24. The hydroelectric centrals of the Rila Planina watershed (between the Rilski Manastir area N 42-08, E 23-19 and Sofia), July 1951:
- a. For a sketch of the location of the centrals, see Appendix B, pages 54, 55, and 56.
- b. The centrals were constructed at the same time as the aqueduct which feeds the centrals.
- c. Plant I has an input of 50,000 kilowatts and Plant II has an input of 15,000 kilowatts.
- d. Plant buildings:
- (1) Plant I, "Mala Tairkva," consists of one principal building, brick construction, one story high, 30 by 25 meters in size, 4-sloped tent-like roof, in which the machinery is installed as well as seven or eight smaller buildings which are used for headquarters, offices, and quarters for the personnel.
  - (2) Plant II, "Simeonovo," consists of one principal brick building, one story high, 50 by 40 meters in size, which has a Marseilles-type 2-slope roof, in which the machinery is installed, and four smaller buildings used as headquarters, offices, and personnel quarters.

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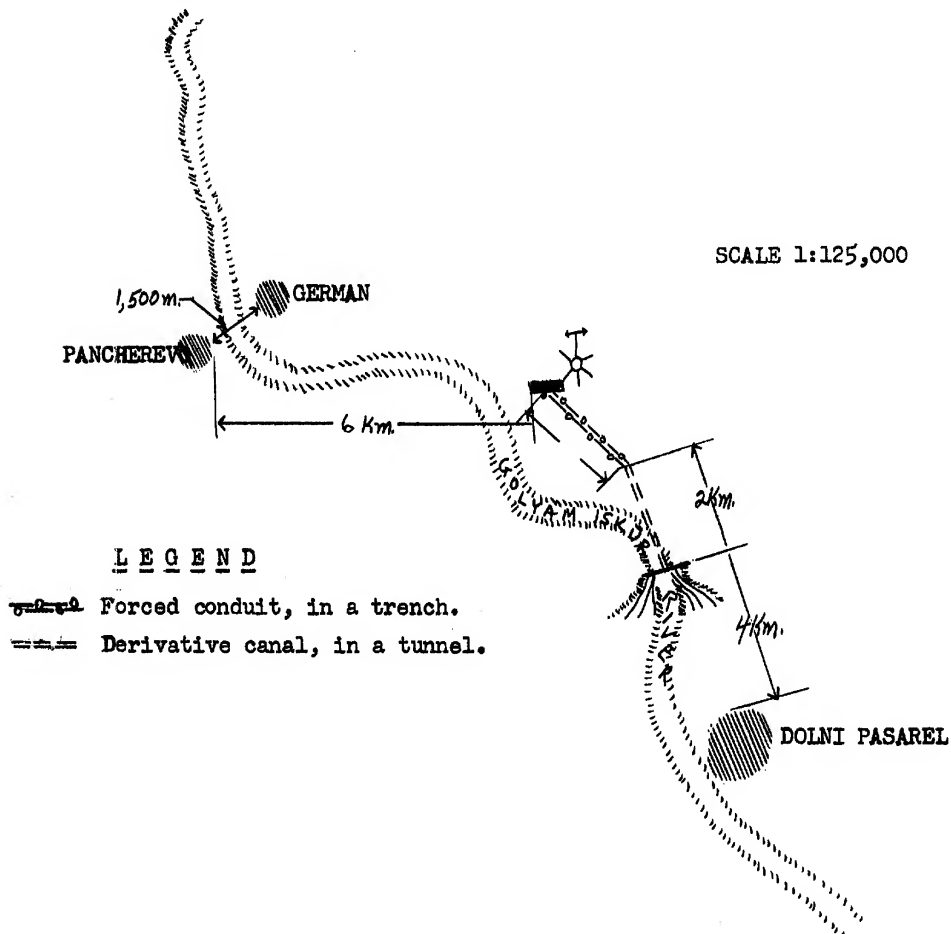
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-30-

- e. A high-power line extends from the Mala Tsurkva plant to Samokov (N 42-19, E 23-33).
- f. The high-power line from the Simeonovo plant extends to the transformer station (for reducing the voltage) which is located in Boris Park in Sofia.
- g. The pylons of both power lines are iron trellises with pyramidal bodies and quadrangular sections 1.50 meters wide at the base, nine or 10 meters high, and set at distances varying between 80 and 130 meters depending upon the terrain.
- h.  Three alternators of Brown Boveri make and one electric air crane of approximately five tons capacity are visible.

## 25. The hydroelectric central at Pancherevo (N 42-35, E 23-24), July 1951:

- a. The central was constructed by a Bulgarian contracting company in the years 1918-1920. 25X1



- b. The plant has an ~~input~~ of 25,000 kilowatts and furnishes power for illuminating the city of Sofia.
- c. The dam is 150-180 meters long at the top, eight or 10 meters high, and 150 meters wide at the top.

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25X1

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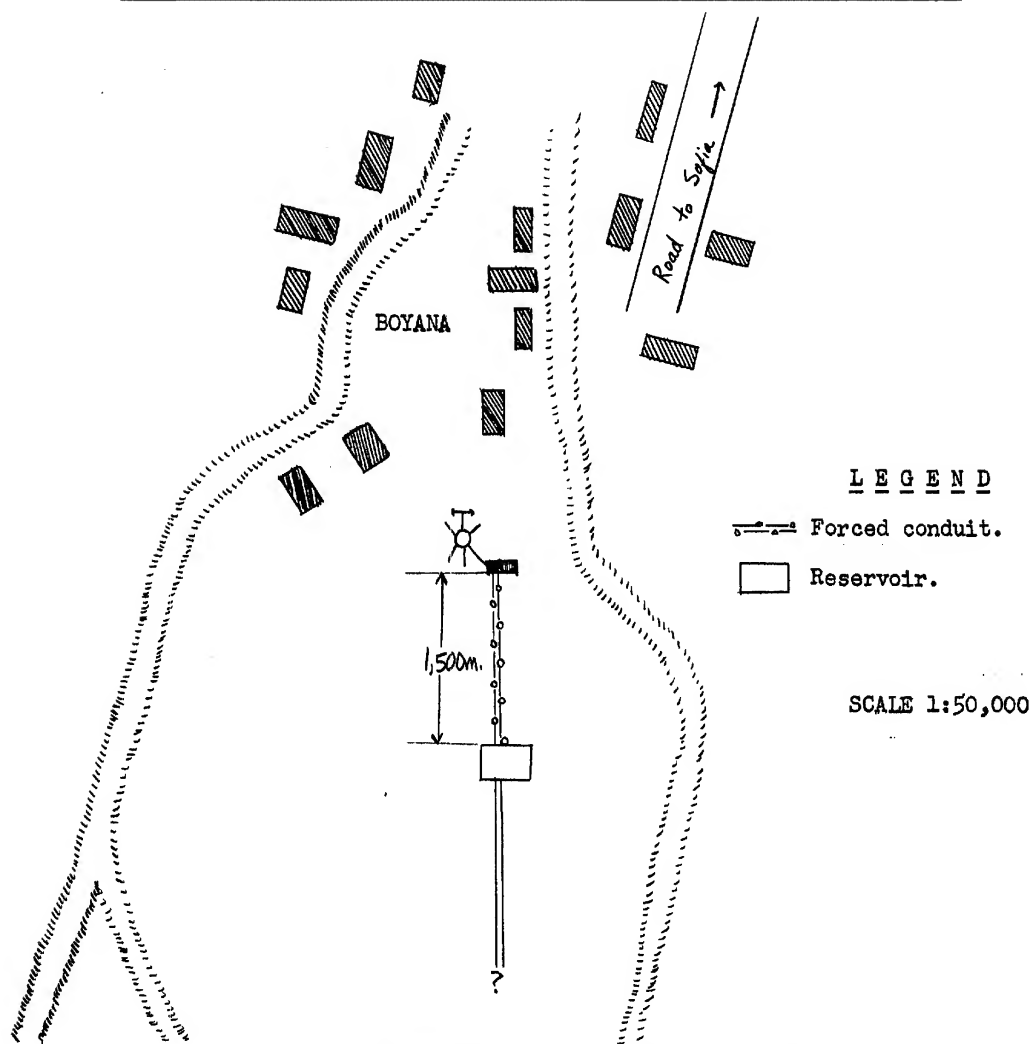
-31-

- d. The derivative canal is inserted directly into the dam through a pressure regulating building which has two iron defenses with toothed rack rods. It enters immediately into a tunnel for a distance of approximately two kilometers, at a constant slope of 0.5 by one meter.
- e. The forced conduit is inserted directly into the derivative canal. It is an open trench with a slope of approximately 0.35 by one meter. It has two Mannesmann tubes which have an internal diameter of 0.80 meters, set 1.20 meters apart in a trench.
- f. The plant building is one story high, of stone construction, and has a 2-slope roof of Marseilles-type tile. Four small buildings which house the headquarters and living quarters of the personnel are located in the immediate vicinity of the plant building.
- g. The primary high power line extends to Sofia through the Pancharevo and German (N 42-37, E 23-25) areas. The pylons are iron trellises with pyramidal bodies and quadrangular sections.
26. The hydroelectric central of the aqueduct Boyana (N 42-39, E 23-16) - Sofia, July 1951:

25X1

25X1

25X1



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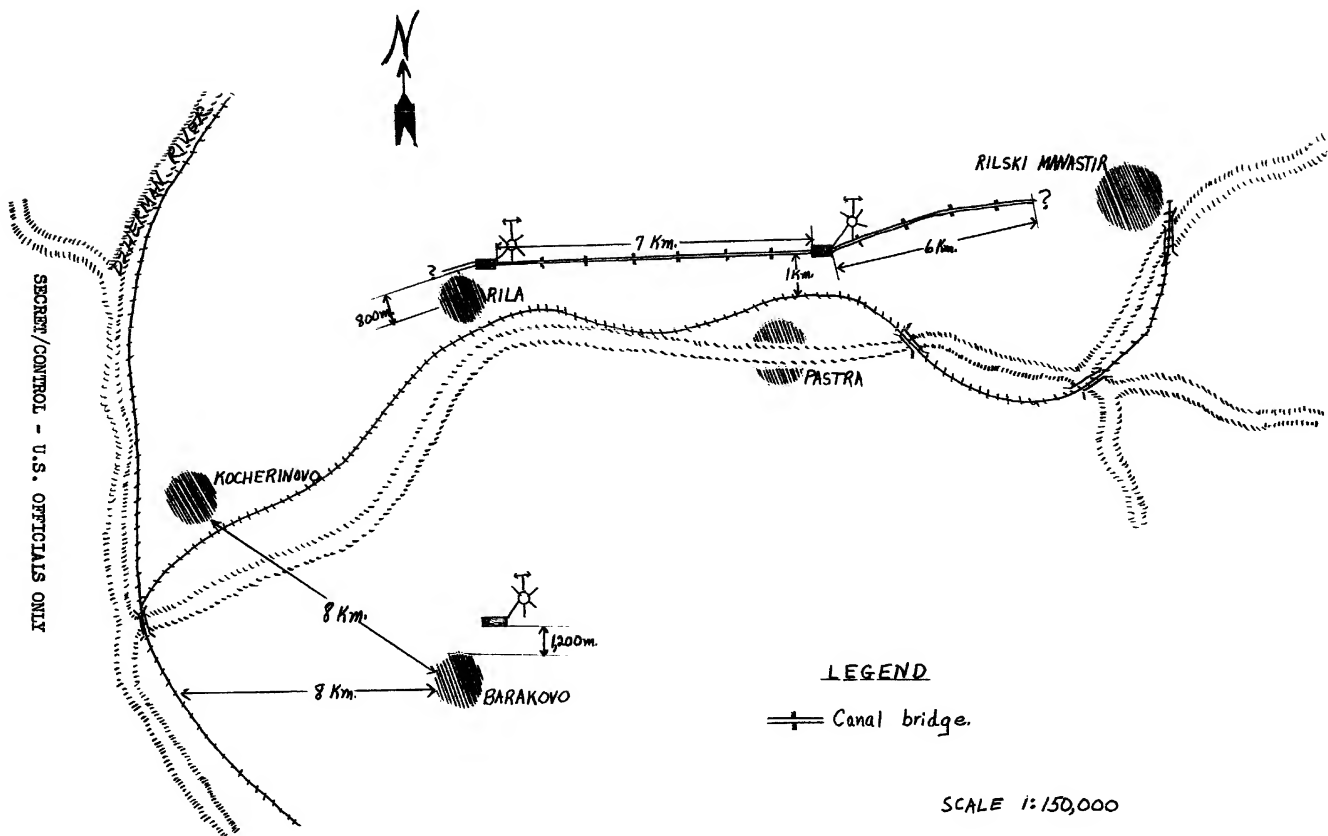
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- b. The plant has an input of 20,000 kilowatts.
- c. The water for the derivative canal comes from the Vitosha Mountains and, through connecting conduits, is collected into a reservoir. A reinforced concrete conduit joins the reservoir and the power plant which are 1,500 meters apart; the conduit is completely underground and has a slope of 0.35 by one meter.
- d. The primary high power line runs to the transformer station which is located at an unknown point in the city of Sofia. The pylons are of the single pole type, sometimes of iron and sometimes in reinforced cement, and have a height of seven or eight meters.
- e. Concerning the distribution of the power, [ ] the plant 25X1 originally furnished energy to the hospitals, the King's Palace, and to the barracks and headquarters of the Royal Guard regiment in the city of Sofia.
27. Hydroelectric central of Rila (N 42-08, E 23-08), August 1950: 25X1
- a. This central was constructed prior to 1925.
- b. Plant I, "Pastra," has an input estimated at between 40,000 and 50,000 kilowatts. Plant II, "Rila," has an input estimated at between 40,000 and 50,000 kilowatts.
- c. [ ] 25X1
- d. Because of the irregularity of the terrain, the derivative canal runs on a canal-bridge of reinforced concrete throughout its whole course; the canal-bridge is at a height varying between one and eight meters. The canal is in the open air, constructed of reinforced concrete, and in general has the following approximate dimensions: width, 2.50 meters and height, 1.80 meters. Its slope varies between 0.25 by one meter and 0.30 by one meter. [ ]
- e. Plant buildings: 25X1
- (1) Plant I comprises one 1-story brick building, 35 meters square, which has a 2-slope tile roof, in which the machinery is installed, and about eight or 10 smaller buildings which are used as headquarters and offices of a cement factory as well and headquarters and personnel quarters for the plant. The smaller buildings are located 300 meters north of the main building.
- (2) Plant II comprises one building of the same characteristics and size as the one described above and is occupied by the plant proper. Four or five smaller buildings, of the same type as those described above, serve as headquarters and lodgings for the personnel of the plant.
- f. The primary line for power distribution connects Plant I to the city of Sofia. Its pylons are of reinforced concrete with pyramidal bodies and rectangular sections; the sides of the bases are 0.80 by 0.60 meters. The primary line emanating from Plant II, however, runs to Dupnitsa (N 42-15, E 23-06). Some of its pylons are similar to those described above and others are wooden poles set in concrete bases.
- g. The following is a sketch of the locations of the Rila and Barakovo hydroelectric plants (see paragraph 28 for a description of the Barakovo installations):

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28. The hydroelectric central at Barakovo (N 42-04, E 23-04), August 1950: 25X1

a. The plant began operating in 1924. Prior to nationalization, it was the property of Ivan Balabanov, now of Milan, who was condemned to death in contumacy in 1948-1949 for confessed "criminal acts" on charges of injuriously exploiting the 25X1 working class.

b. [ ] the input of the plant [ ] it is not less than 20,000 kilowatts.

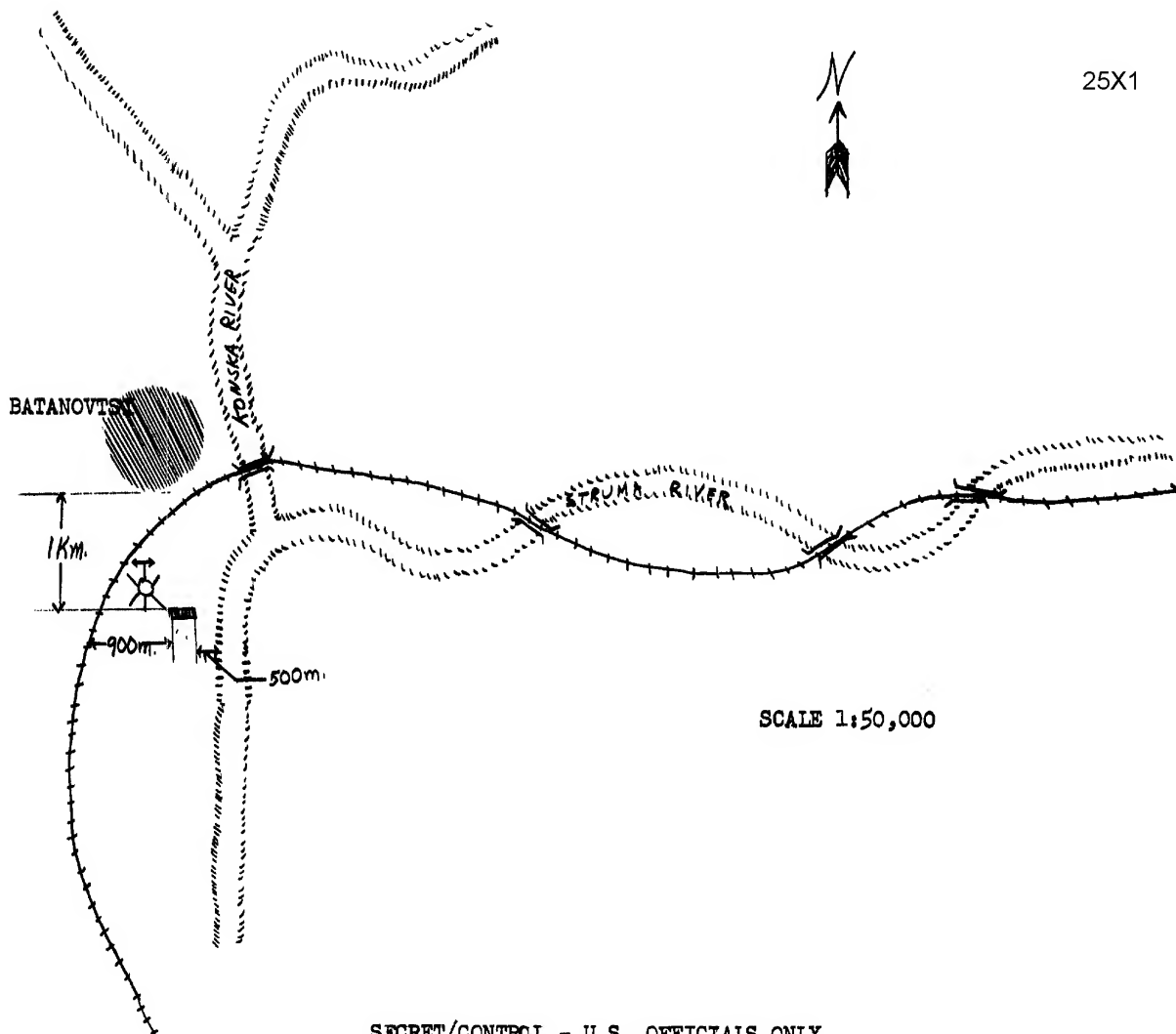
c. [ ] 25X1

d. The plant supplies electric power to the Barakovo paper mill and to the neighboring sawmills in the city of Gorna Dzhumaya (N 42-01, E 23-06). 25X1

29. The hydroelectric central of Batanovtsi (N 42-37, E 22-57), Summer 1950:

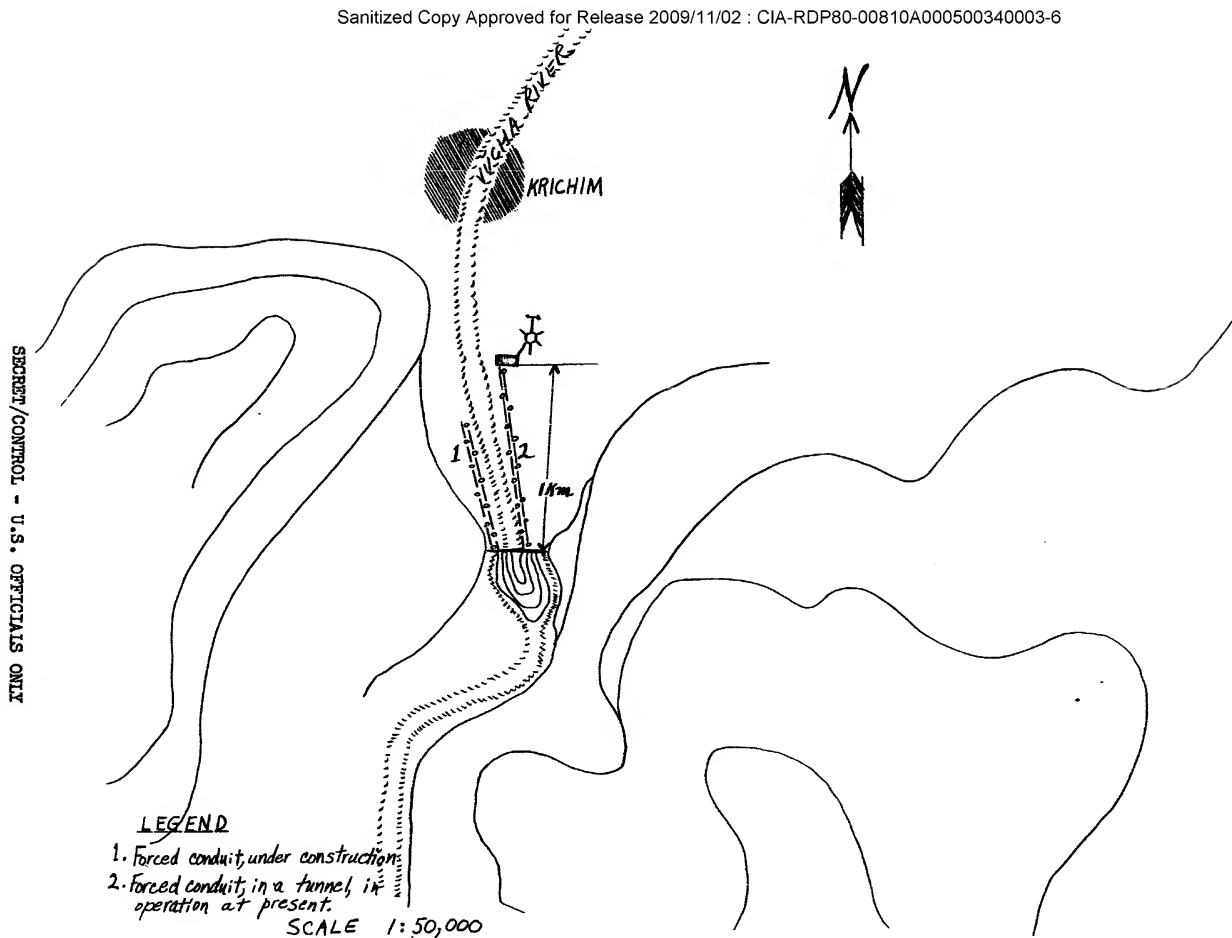
a. This central began operating in 1920-1924. [ ] its input [ ] was not less than 20,000 kilowatts. 25X1

b. [ ] the feeding canal and the distribution of power. Its location is as follows: 25X1



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30. The hydroelectric central of Krichim (N 42-03, E 24-26), September 1949:
- a. The central began operating in 1924-1927, and as of September 1949 was still undergoing enlargement work which was begun in 1948.



25X1

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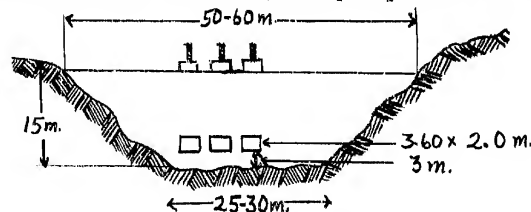
25X1

- b. [redacted]
- c. The dam is located approximately 150 meters from the plant building. [redacted]
- d. The forced canal is inserted directly into the dam and runs to the central through a subterranean course 1,000 meters long. On the bank opposite the bank on which the above-mentioned conduit is located, another forced conduit, partly open and partly underground, is being constructed to feed the other turbine which is part of the enlargement project.
- e. Two primary lines leave the plant--one to Peshtera (N 42-02, E 24-18), and the other to Gara Krichim (N 42-07, E 24-32). The pylons for both lines are iron trellises with pyramidal bodies and quadrangular sections. 25X1

31. The hydroelectric central at Mezdra (N 43-09, E 23-40), Spring 1950:

- a. This central was constructed. Enlargement work was undertaken during 1946-1949 for the purpose of raising the plant's capacity as well as enlarging the buildings. 25X1
- b. [redacted] the input of the central [redacted] is not less than 30,000 kilowatts. 25X1
- c. The dam is constructed of stone with maltha cement and has its axis perfectly perpendicular to the direction of the stream. Its wall is reinforced with concrete for a layer of 1.20 meters, while the base is covered with cut stone. The dam is 25-30 meters long at the base, 50-60 meters long at the top, 35-40 meters long in the middle, 15 meters wide at the base, four meters wide at the top, and 15 meters high. The pressure buildings are located at the base of the dam and have iron gates which are regulated by means of cogged chains. There are three of these installations, all of which have apertures of 3.60 meters in width and two meters in height.

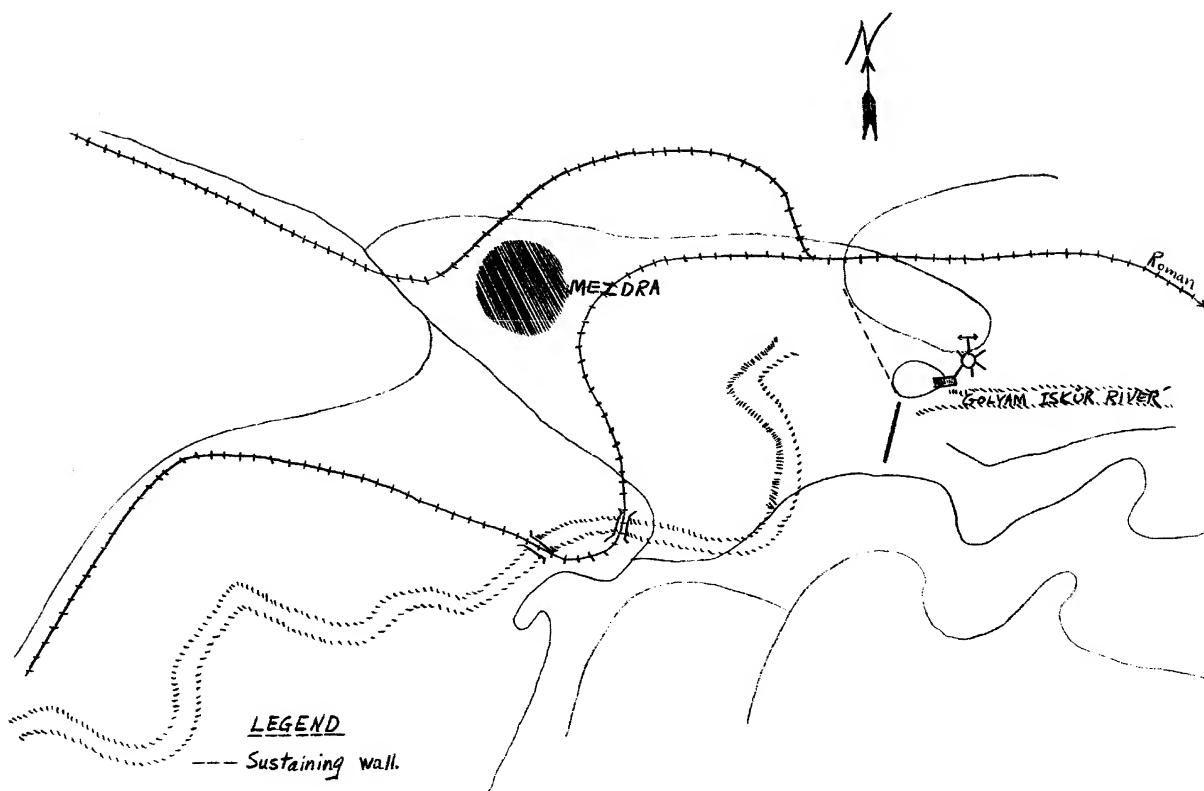
Detail of the pressure building and perspective of the dam:



- d. There are three derivative canals which are inserted into (three) reinforced concrete tubes. The conduits extend to the plant which is located 100 meters downstream. [redacted] 25X1
- e. The basin is approximately one kilometer long and 400 meters wide.
- f. It was necessary to divert the river for a distance of one kilometer at a maximum distance of 300 meters from its original bed; for this purpose, a wall was constructed for a length of two kilometers. This construction is of packed earth with an inside reinforcement of a stone wall and maltha cement. The wall is three meters thick at the top and a height of 10 meters, in the vicinity of the natural elevation of the terrain in which it is set.
- g. The plant building is located on an islet 100 meters downstream from the dam. It is one story high and has a 4-slope red tile roof and wide side windows both upstream and downstream. The building is 50 meters long and 20 meters wide.

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h. The following is a sketch of the Mezdra hydroelectric plant location:



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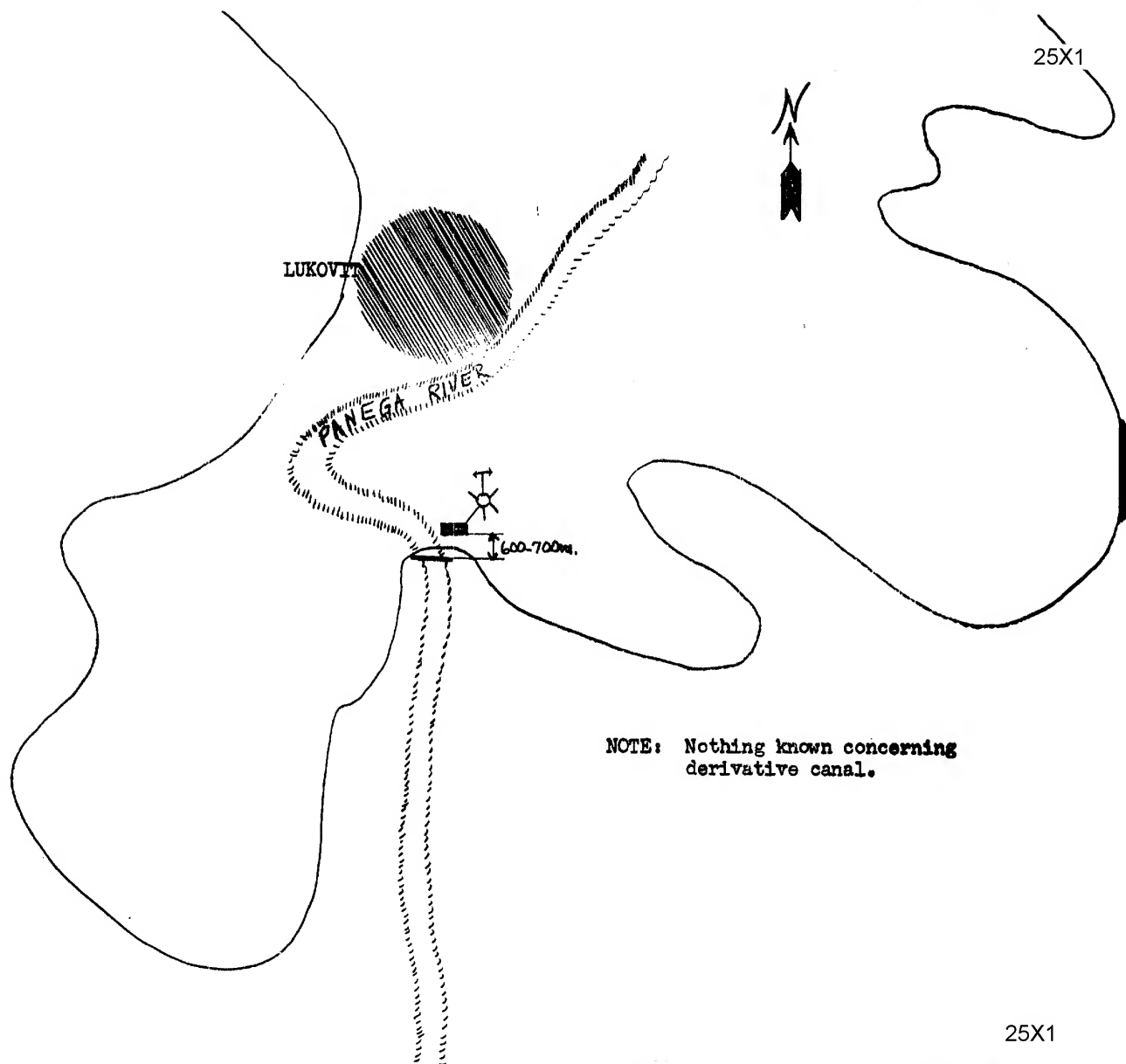
25X1

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- i. Concerning the primary power line, [redacted] it leaves the plant in the direction of Mezdra, and that it probably extended to that city. 25X1
32. The hydroelectric central at Lukovit (N 43-12, E 24-10), Autumn 1949; 25X1
  - a. The central began operating in 1926-1928. [redacted]  
[redacted] it is at least 15,000 kilowatts. It is located as follows:



NOTE: Nothing known concerning derivative canal.

- b. There is an old plan to enlarge the central, but the plan has not yet been carried out.
- c. The dam is located 600-700 meters from the central. [redacted]

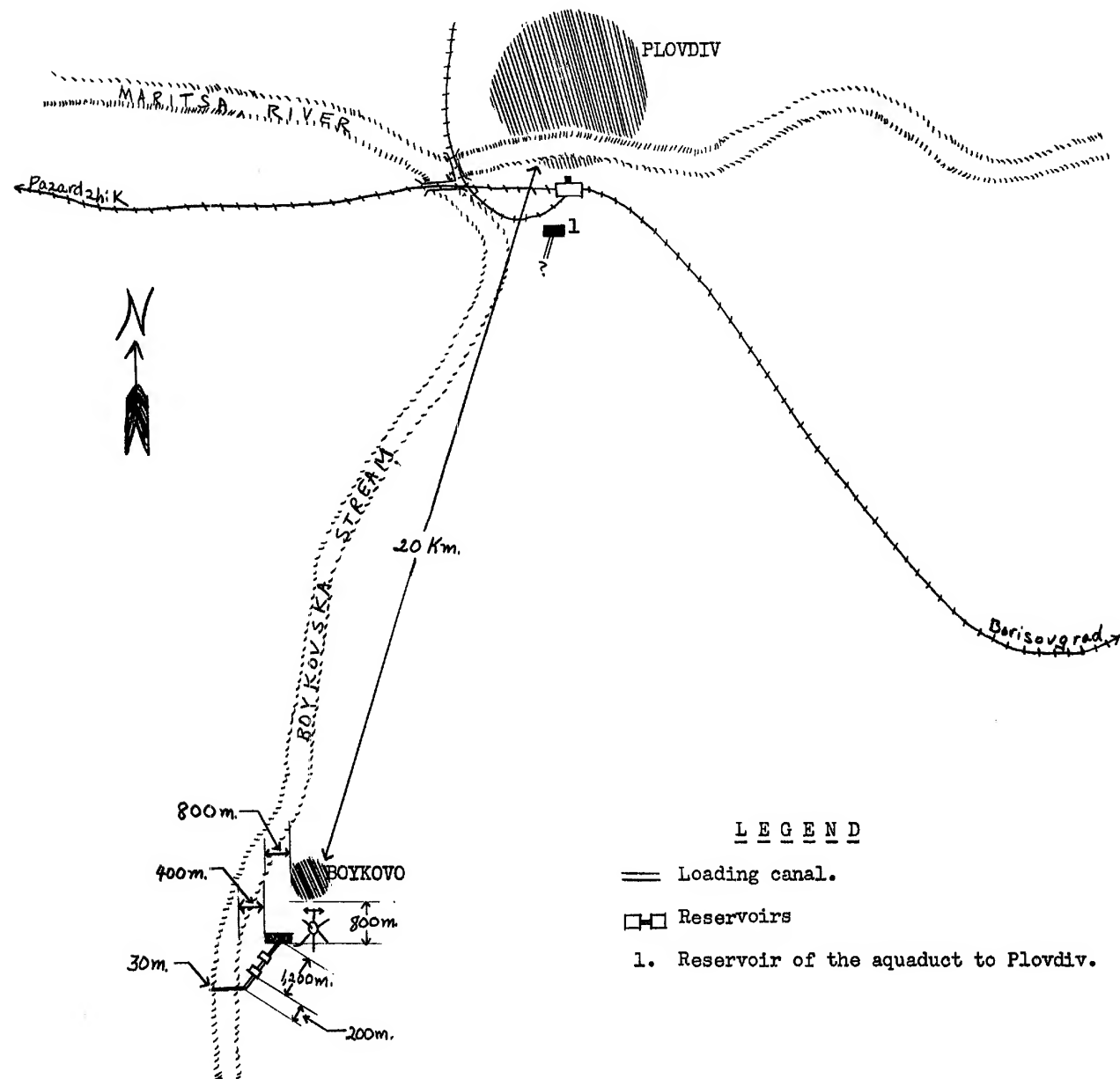
[redacted]

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- d. The plant building is on the right bank of the Panega River. It is a 1-story construction and has a 2-sloped roof of standard tiles.
- e. Two primary high power lines lead out from the plant. One goes to Pleven (N 43-25, E 24-36) and the other goes to Cherveni Bryag (N 43-16, E 24-06).
33. The hydroelectric central of Boykovo (N 41-59, E 24-37), Autumn 1949:
- a. The central began operating during 1928. It has an input of 15,000-20,000 kilowatts, and is located as follows:



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25X1

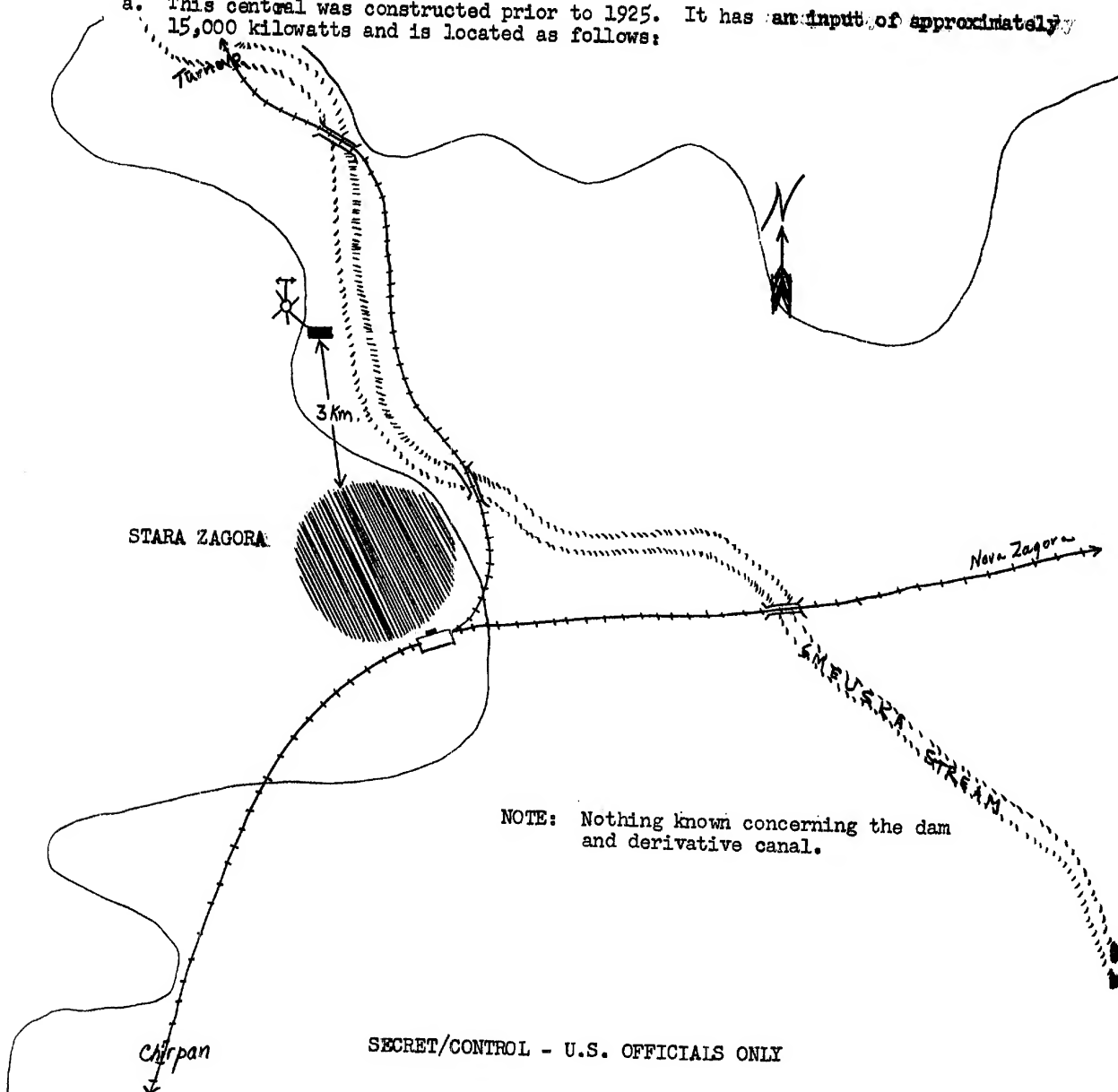
- b. The dam is 30 meters long at the top. [redacted]
- c. The derivative canal is inserted directly into the dam through a pressure regulating building which has an iron gate. After a course of approximately 200 meters, it arrives at two underground collecting reservoirs, then continues on to the plant building which is approximately 1,200 meters past the reservoirs. Informant could give no details concerning the reservoirs. Throughout its complete course, the canal is laid out in trenches and covered with concrete plates. It has a constant slope of 0.10 by one meter. The discharge canal, consisting of an aqueduct, continues to a collecting reservoir 400 meters from the main station of Plovdiv.

d. [redacted] 25X1

- e. Concerning the main power line, [redacted] it runs to the Plovdiv locality.

34. The hydroelectric central of Stara Zagora (N 42-25, E 25-38), Winter 1950: 25X1

- a. This central was constructed prior to 1925. It has an input of approximately 15,000 kilowatts and is located as follows:



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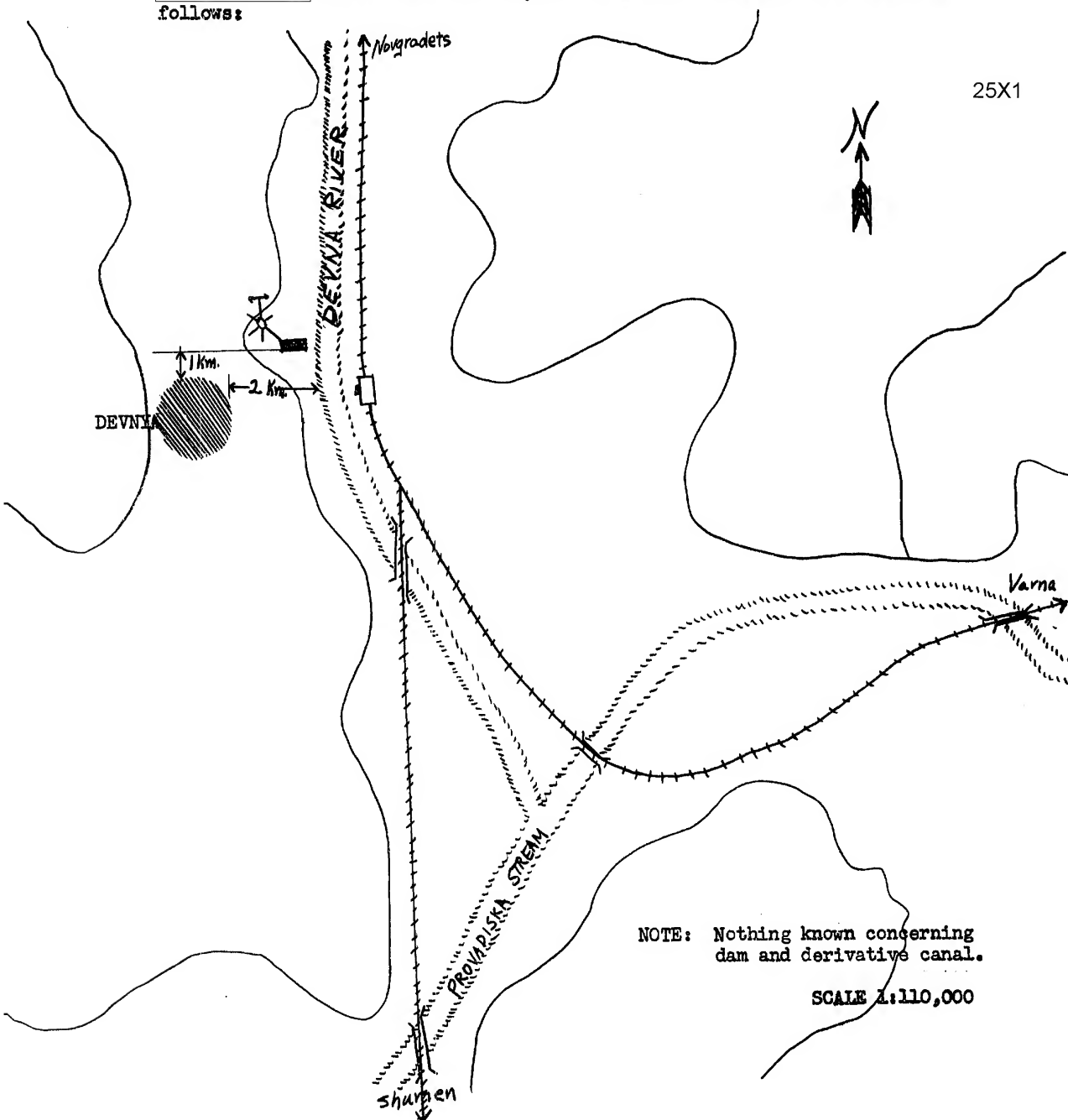


25X1

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- b. Concerning the feeding canal, [ ] it consists of an aquaduct. 25X1
- c. The plant building is a 1-story structure and has a 2-slope terrace roof of Marseilles-type tile.
- d. The primary high power line extends to the Stara Zagora locality. 25X1
35. The hydroelectric central at Devnya (N 43-14, E 27-33), March 1951:
- a. The plant began operating in 1926. [ ] its input [ ] is not less than 25,000 kilowatts. The plant is located as follows: 25X1



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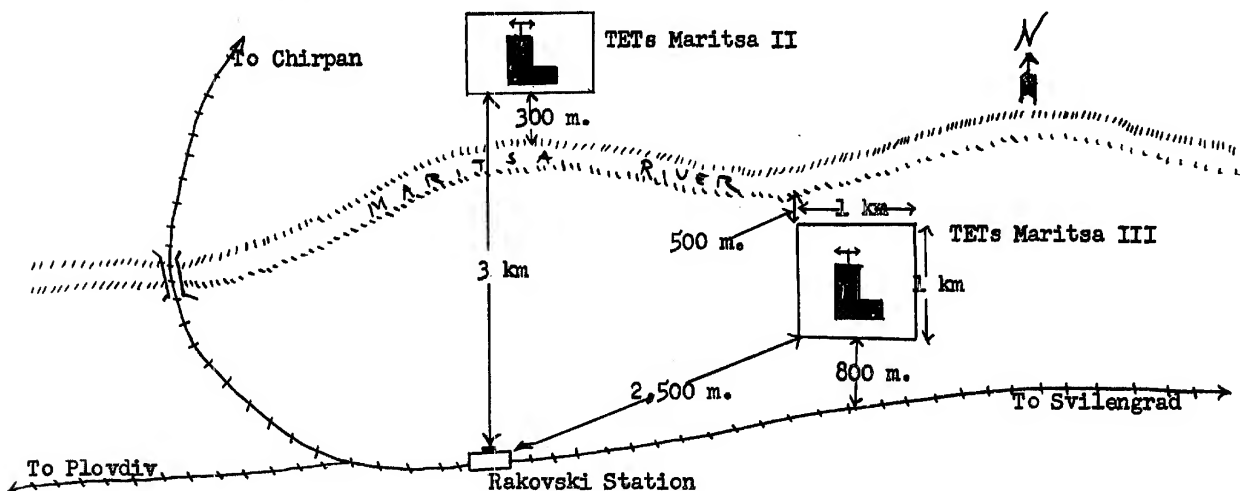
-42-

- b. [ ] the feeding of the central. It seems to be fed from the aquaduct at Lake Deven, Varna.
- c. The primary high power line goes to the city of Varna. Its pylons are iron frames with pyramidal bodes and rectangular sections and are eight or nine meters high. 25X1
36. The hydroelectric central at Karlovo (N 42-38, E 24-49), Spring 1950:
- a. The central began operating during 1925. It has a power input of not less than 20,000 kilowatts.
- b. [ ]
- c. The plant building is located 800 meters north of the city of Karlovo. It is a 1-story construction and has a terrace roof. 25X1
- d. The high power line from the plant extends to the Karlovo locality.

## THERMOELECTRIC PLANTS

Thermoelectric Plants Under Construction

37. The "TETs Maritsa III" in Dimitrovgrad (Rakovski section, N 42-03, E 25-35), June 1951:
- a. Construction was begun in 1949 and the plant is scheduled to be opened on 9 September 1951.



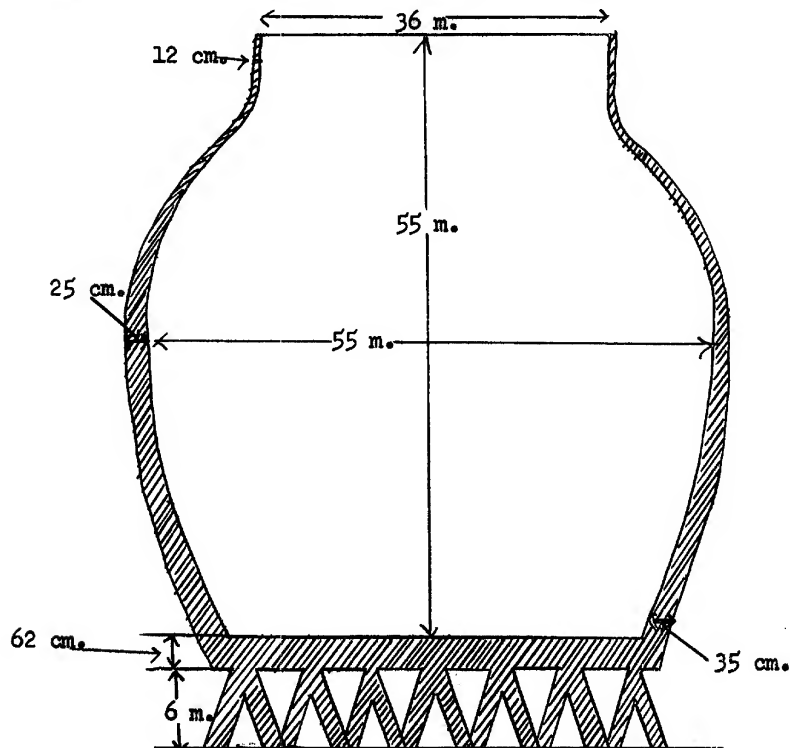
- b. The central is to have an input of 125,000 kilowatts.
- c. The machinery is of Soviet manufacture and has already arrived.
- d. The TETs Maritsa III is to furnish power for the industrial establishments now under construction in the Rakovski section of Dimitrovgrad.
- e. Work was scarcely finished on this plant when a second thermoelectric plant of the same power input and capabilities was begun.

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- f. The plant building is of reinforced concrete construction, two stories high, 50 by 40 meters in size, with a twin-sloped terrace roof. Various smaller buildings which serve as directorate headquarters, offices, and lodgings are located around the plant building. A circular chimney of reinforced concrete construction, 105 meters high, 18 meters in diameter at the base, and five meters in diameter at the top, is located approximately 120 meters south of the main plant building.
- g. The cooling tank is located 120 meters north of the plant building and the water is pumped in from the Maritsa River. The tank is completely constructed of reinforced concrete and will be used for both plants.



- h. Work is in the process of completion.
- i. The project is being carried out by the Bulgarian organization known as "Stroi Obedineni Dimitrovgrad" (company for the construction of the city of Dimitrovgrad), which is subordinate to the Ministry of Public Works.
- j. Georgi Penchev, 40-44 years old, is the political director of the project. The architect Sotirov (fnu), 45 years old, is in charge of work performance.
- k. The labor force consists of 800-1,000 Trudovaks and 1,500 civilian workers.
- l. Transportation facilities and machinery in use consist of about 20 motor vehicles of various tonnages of Soviet and Czechoslovakian manufacture, two Skoda excavators, and one crane on tracks.

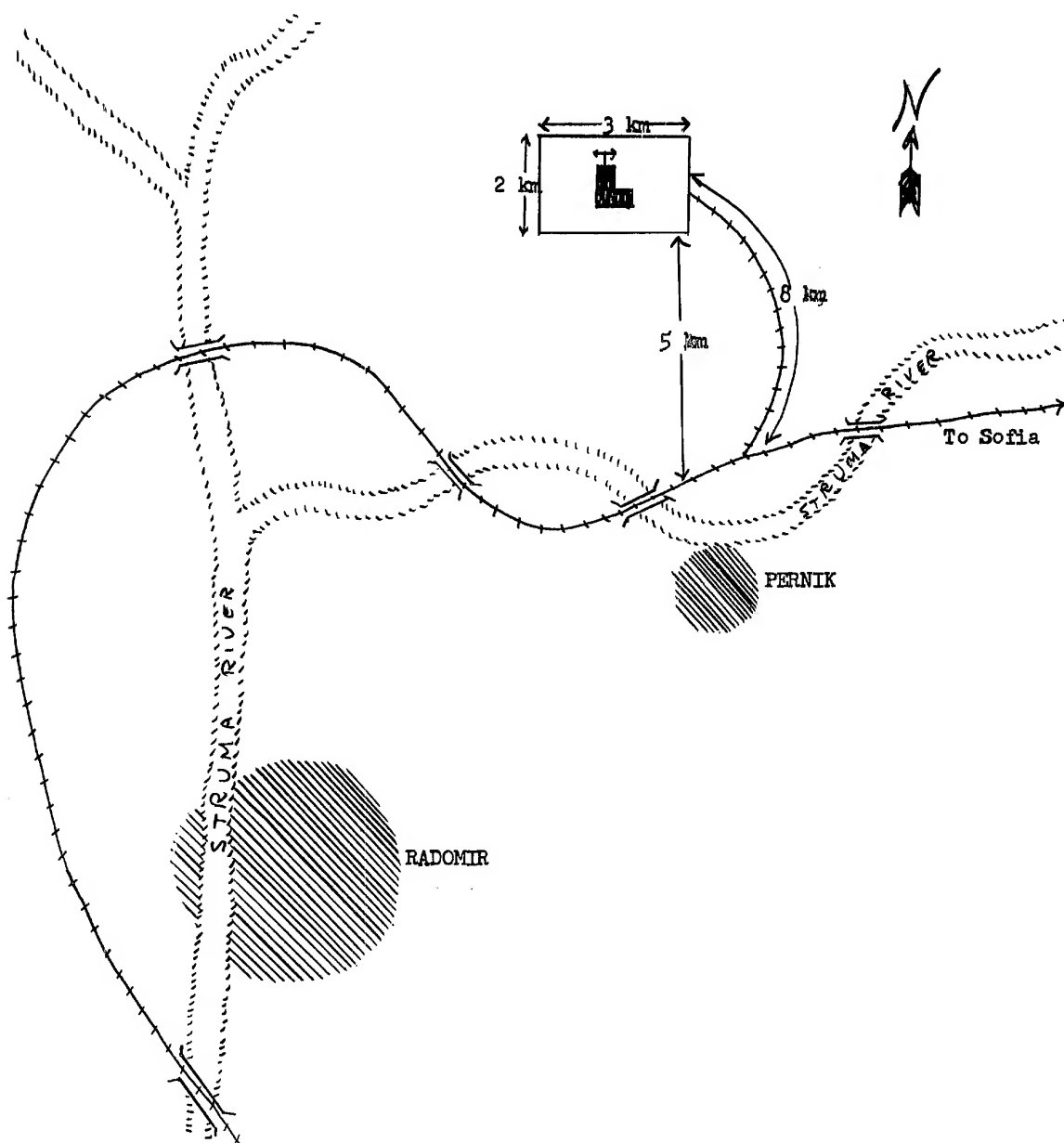
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38. The "TETs Maritsa II" in the Rakovski section of Dimitrovgrad, June 1951:
- Construction was begun in the spring of 1950 and is to be completed during 1955.
  - The central is to have a power input of 250,000 kilowatts.
  - Work at present is restricted to land preparation and to building the foundation of the plant building.  For 25X1 a sketch of the location, see paragraph 37a, above.
39. The "Moshino" thermoelectric central of Pernik (N 42-36, E 23-03), located in Moshino village (N 42-36, E 23-05), May 1951:
- Construction was begun in 1948 and is scheduled to be finished on 9 September 1951.



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- b. The plant is to have an input of 250,000 kilowatts. 25X1
- c. The plant building is three stories high, 50 by 40 meters in size, and constructed of reinforced cement. It has a twin-slope terrace roof, with only a slight slope. Its height is approximately 20 meters. Each story has wide windows about five by three meters in size. Two circular chimneys 11.5 meters high, 16 meters in diameter at the base, and five meters in diameter at the top, are located in the immediate vicinity of the plant building. An unknown number of smaller buildings which serve as headquarters, offices, and lodgings for the plant personnel are located around the main building. 25X1
- d. [redacted] the machinery [redacted] arrived at the plant in early 1948. It was imported from the USSR [redacted] 25X1
- e. There are two cooling tanks, circular in shape, 52 meters high, outer diameter approximately 40 meters, which are located 80 meters from the plant building. Informant did not know how water is obtained for the tanks. 25X1
- f. [redacted] the destination of the power produced by the plant. [redacted] two primary high power lines extend from the plant. These lines were not in use as of May 1951. The pylons have an iron framework with pyramidal bodies and rectangular sections. 25X1
- g. Construction work is in the process of completion.
- h. The plant area is approximately three kilometers (east-west) by two kilometers, and is enclosed by a fence 2.80 to three meters high. The posts are set in concrete. 25X1
- i. The plant is to be connected with the Pernik railroad station by a standard-gauge line eight meters long. A bridge approximately 250 meters long is to be built over the river three kilometers from the Pernik station. At present only land preparation work is under way.
- j. The project is being carried out by Sovbolstroï, the joint Soviet-Bulgarian construction company. Both Bulgarian and Soviet technical personnel are employed.
- k. Engineer Bachev, [redacted] Bulgarian, is in charge of work performance. 25X1
- l. The labor force consists of 2,500 civilian workers and 600 Trudovaks. Work is done in three shifts per day.
- m. Transportation facilities consist of 40-50 motor vehicles of various tonnages, of Soviet, German and Czechoslovakian manufacture, and three or four kilometers of a permanent narrow-gauge rail line served by four steam locomotives.

Thermoelectric Plants in Operation

## 40. The "TETs Stalin" of Sofia, July 1951:

- a. Work was begun in 1947-1948 and was completed in April 1950. The plant has a power input of 75,000 kilowatts.
- b. To increase the power capabilities of this central, a second thermoelectric plant was begun in the autumn of 1950 by Sovbolstroï. This plant will double the present input of 75,000 kilowatts, and is to be completed during 1951.

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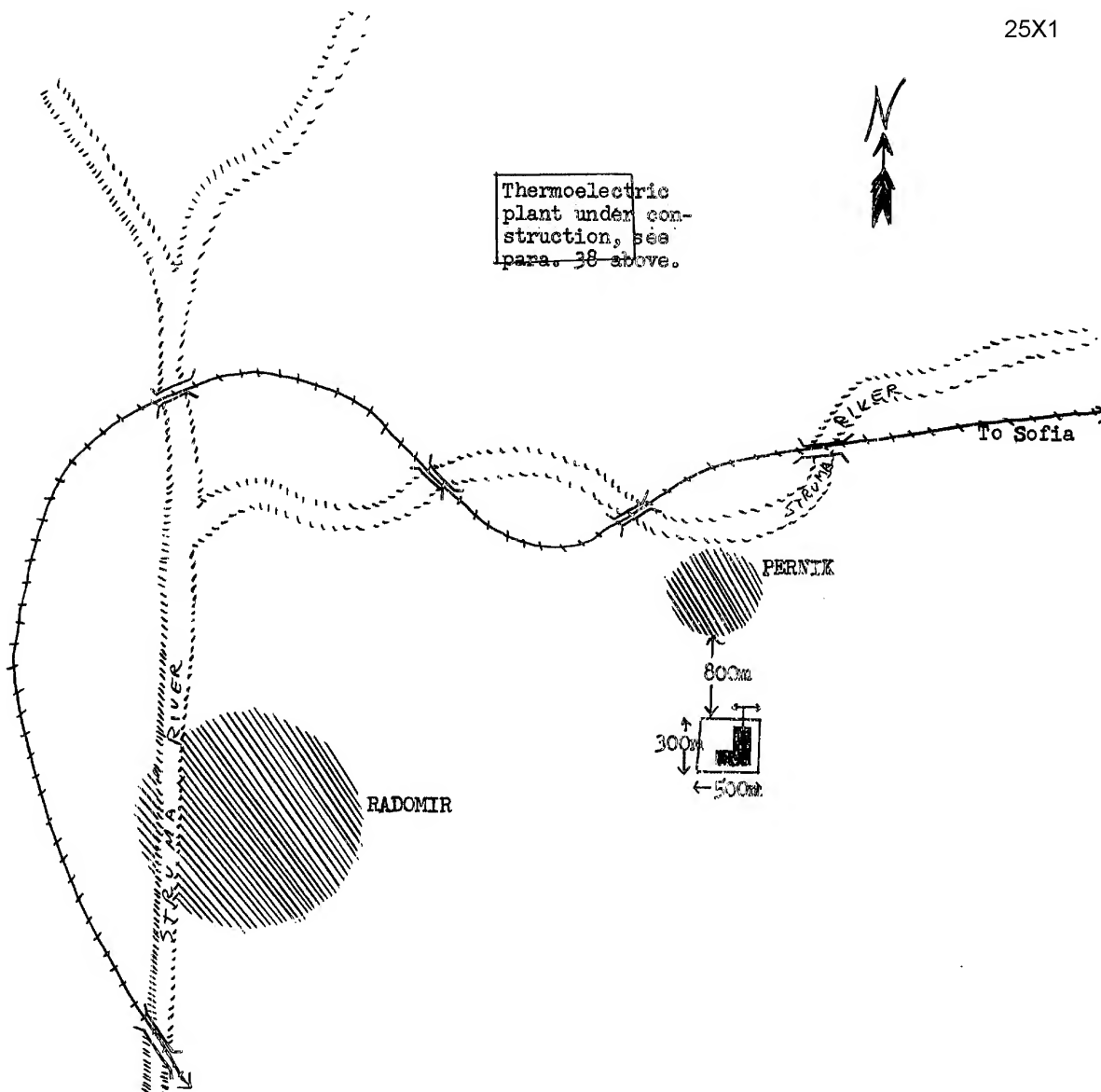
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- c. The plant building is of reinforced concrete construction, three stories high, approximately 60 by 50 meters in size, 40 meters high, and has a terrace roof. Various smaller buildings which serve as directorate headquarters, workshops, and lodgings for the personnel are located around the main plant building.
- d. The two cooling towers are located 120 meters from the plant building. They are of reinforced concrete construction, circular, 38 meters high, and have an outer diameter of 24 meters.
- e.

41. The thermoelectric central of Pernik, April 1951:

- a. This plant was built in 1922-1924 and has a power input of 30,000 kilowatts.

25X1



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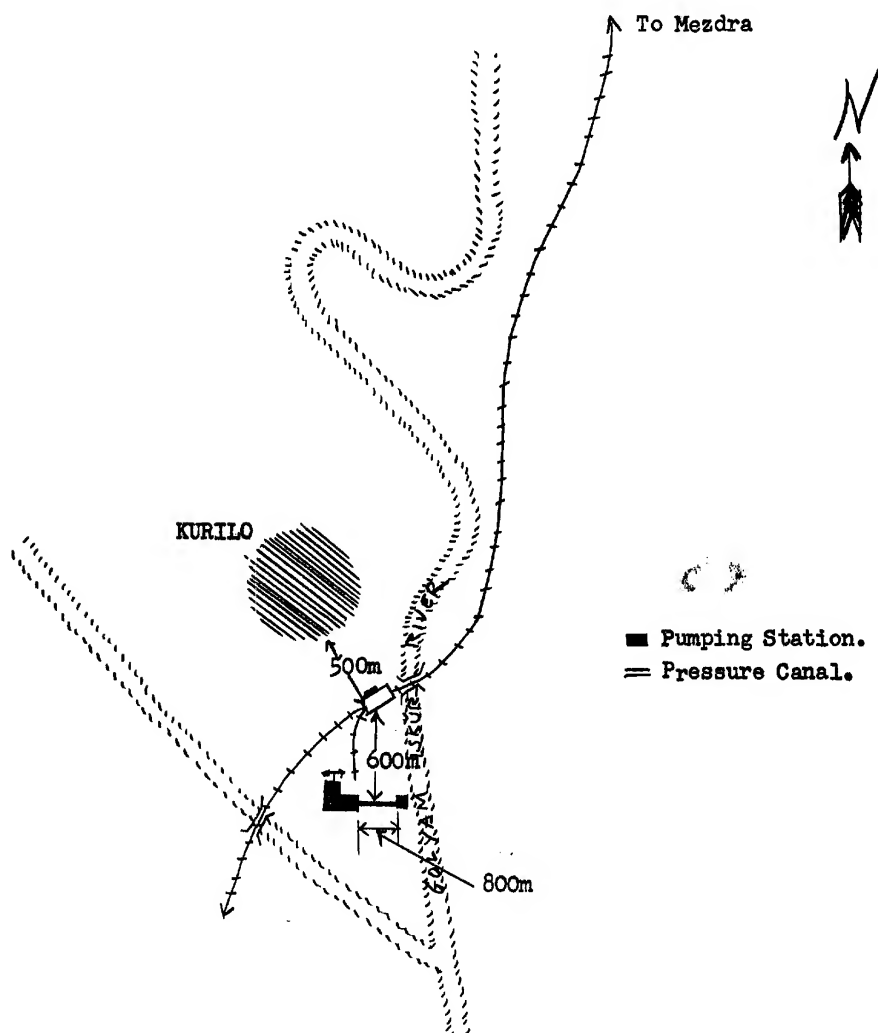
-47-

- b. Amelioration work is under way, and the power capacity is allegedly to be doubled. This work was started in the autumn of 1948 by Sovbolstroï, and is to be finished during 1951.

25X1

42. The thermoelectric plant of Kurilo (N 42-50, E 23-19), July 1951:

- a. This plant was built in 1927-1930 and has an input of 60,000 kilowatts. It supplies power for the industrial complexes of Sofia. Two primary lines proceed south from the transformer room, in the direction of Sofia. The pylons are the iron frame type, with pyramid bodies and quadrangular sections. The plant is located as follows:



b. The plant has the following parts:

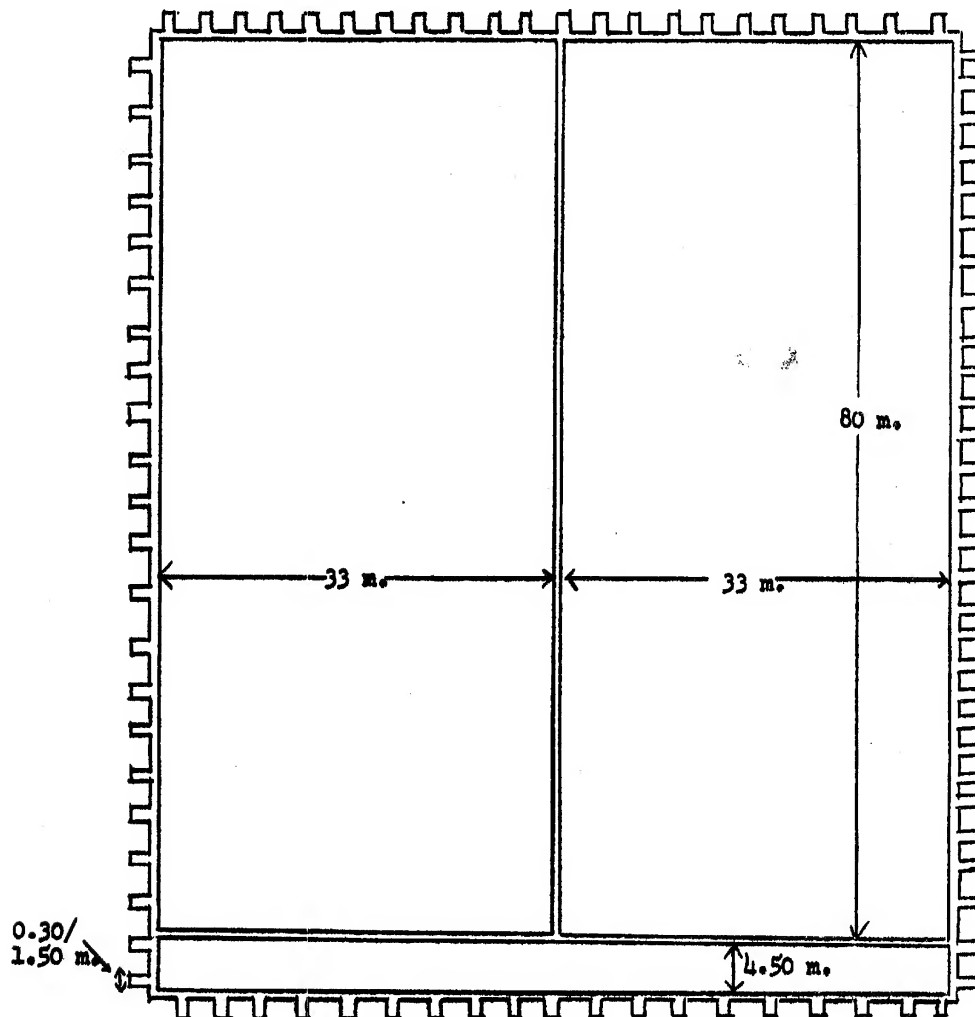
- (1) Machine room, located in a reinforced concrete building 50 by 25 meters in size, which has a twin-sloped roof of Marseilles-type tile. The building is 26 meters high.

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- (2) Boiler room, located in another reinforced concrete building, 50 by 40 meters in size, 22 meters high, which has an "irregular-sloped" tile roof. There are six boilers [redacted] which are 25 meters long. There are two elliptical burners, transverse axis 3.50 meters, and conjugate axis two meters, which are located 80 centimeters apart. The chimneys are of metal construction, 25-28 meters high, and have a diameter of 1.50 meters at the top.
- (3) Transformer room, located in a reinforced concrete building, 50 by 25X1 meters in size, which has a terrace roof.
- (4) Personnel headquarters are located in another reinforced concrete building, 50 by 12 meters in size, which has a terrace roof.
- c. The cooling tanks are completely constructed of reinforced concrete and are covered by reinforced concrete lids. They are 80 meters long, 66 meters wide, 3.50 meters high, and are supported by pillars. The pumping station has eight pumps of Brown Boveri make and is located in a reinforced concrete construction 18 by eight meters in size.



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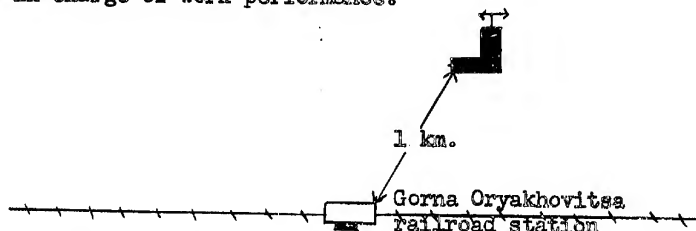
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- d. The water for the cooling tanks is obtained from the Iskür River and from six artesian wells when the river is dry.
- e. The water pressure canal is drawn from the river by means of a pumping station and runs in the open air through a course of 800 meters in reaching the plant building. The canal trench is faced with stone masonry, and has a constant slope of 0.2 x 1 meter; an ordinary trapezoidal section has a height of three meters, a small base of 1.50 meters, and a large base of eight meters.
- f. The six artesian wells have a depth varying between 180 and 200 meters. Their cylindrical tubes have an inner diameter of 1.50 meters for the first 40 to 80 meters in depth and narrow to 25 centimeters for the remainder of the distance.
- g. The plant has standard-gauge rail connections with the Kurilo railroad station.

43. The thermoelectric central at Gorna Oryakhovitsa (N 43-07, E 25-41), Spring 1951: 25X1

- a. This plant was begun in 1947 and was finished in the autumn of 1950. Todor Atenasov, [redacted] engineer [redacted] was in charge of work performance.

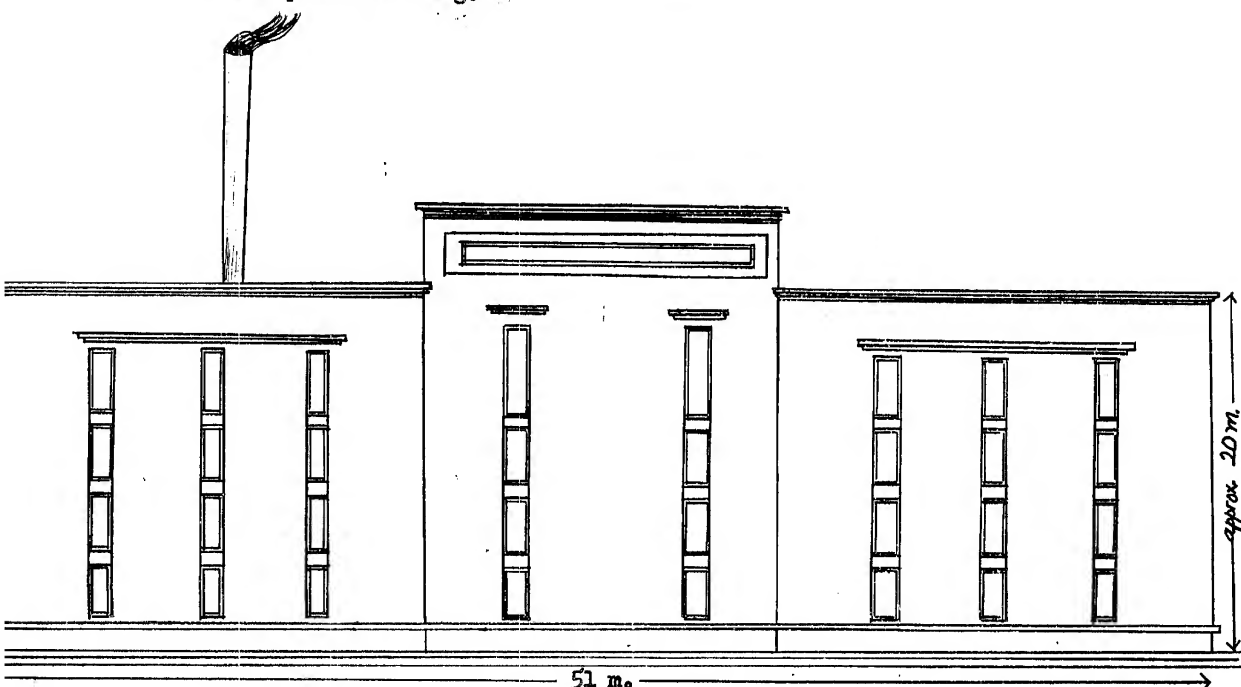


25X1

25X1

- b. The plant has a power input of 10,000 kilowatts. [redacted] Most of the power produced at this plant is used to illuminate the city of Gorna Oryakhovitsa. The plant building is of reinforced concrete construction, 50 by 40 meters in size, and has a terrace roof. The following is a front view of the plant building:

25X1



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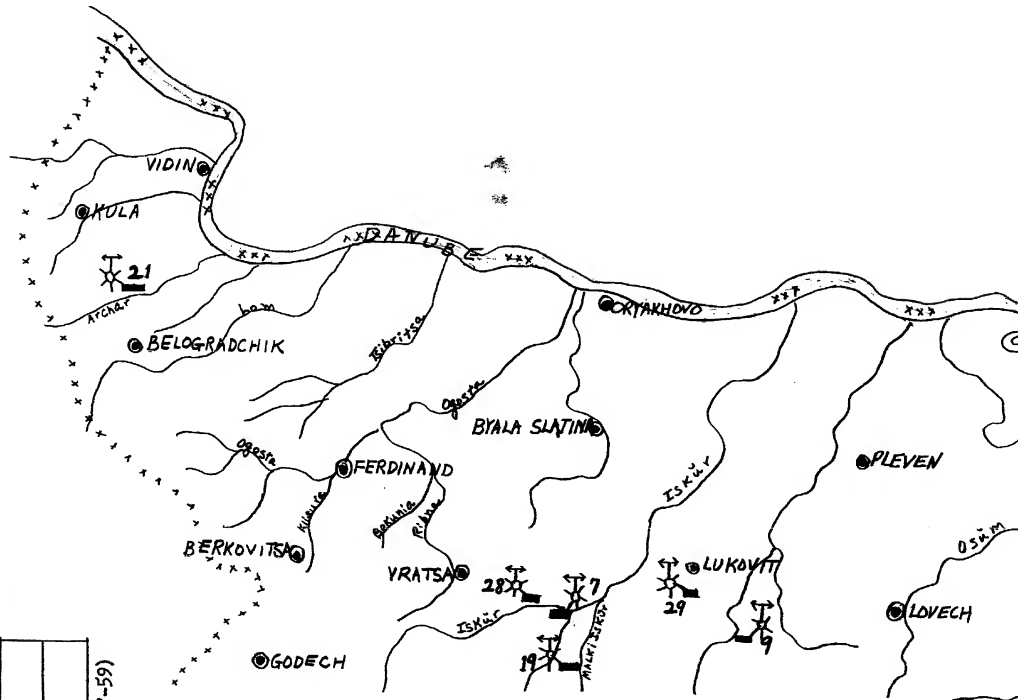
Bulgarian Power Resources - Scale 1:1,000,000

Hydroelectric plants. (1-21 under construction, except 5a which is already in operation; 22-32 already in operation)  
Thermoelectric plants. (33-34 under construction; 35-38 in operation)

Assemble sketch as follows:

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-55	-55

(Key pp. 57-59)

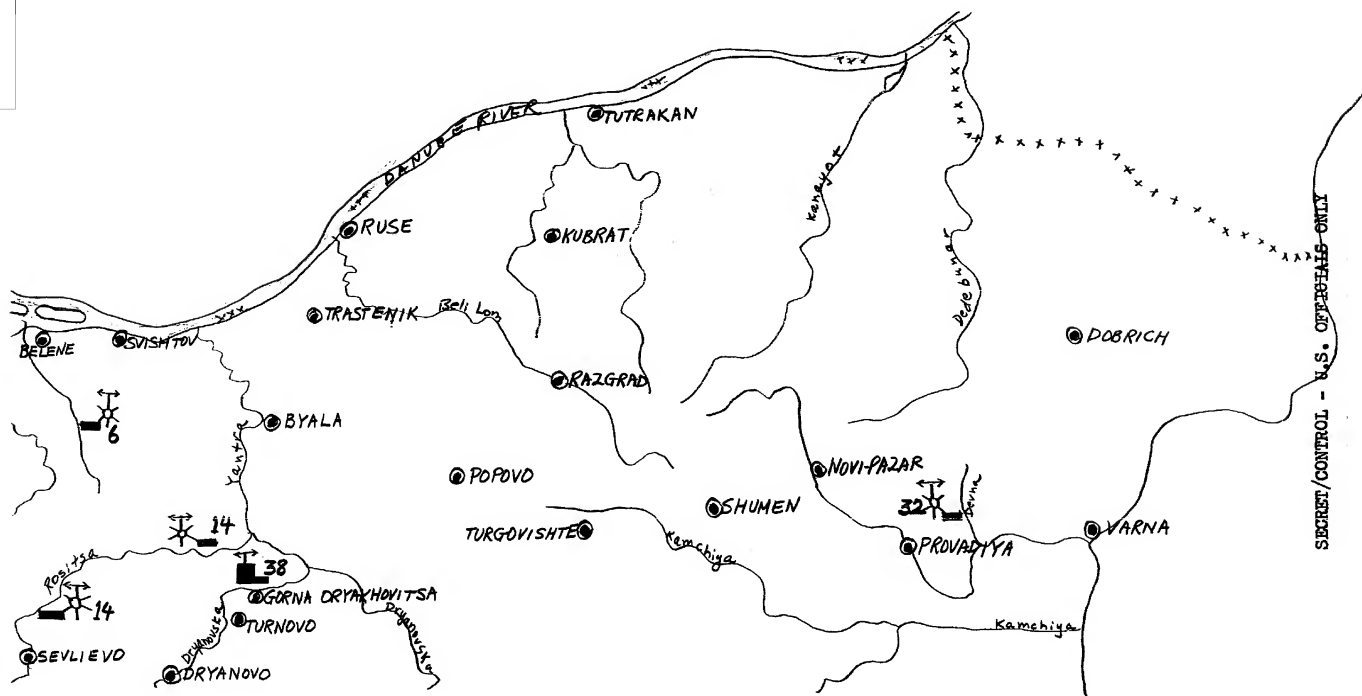


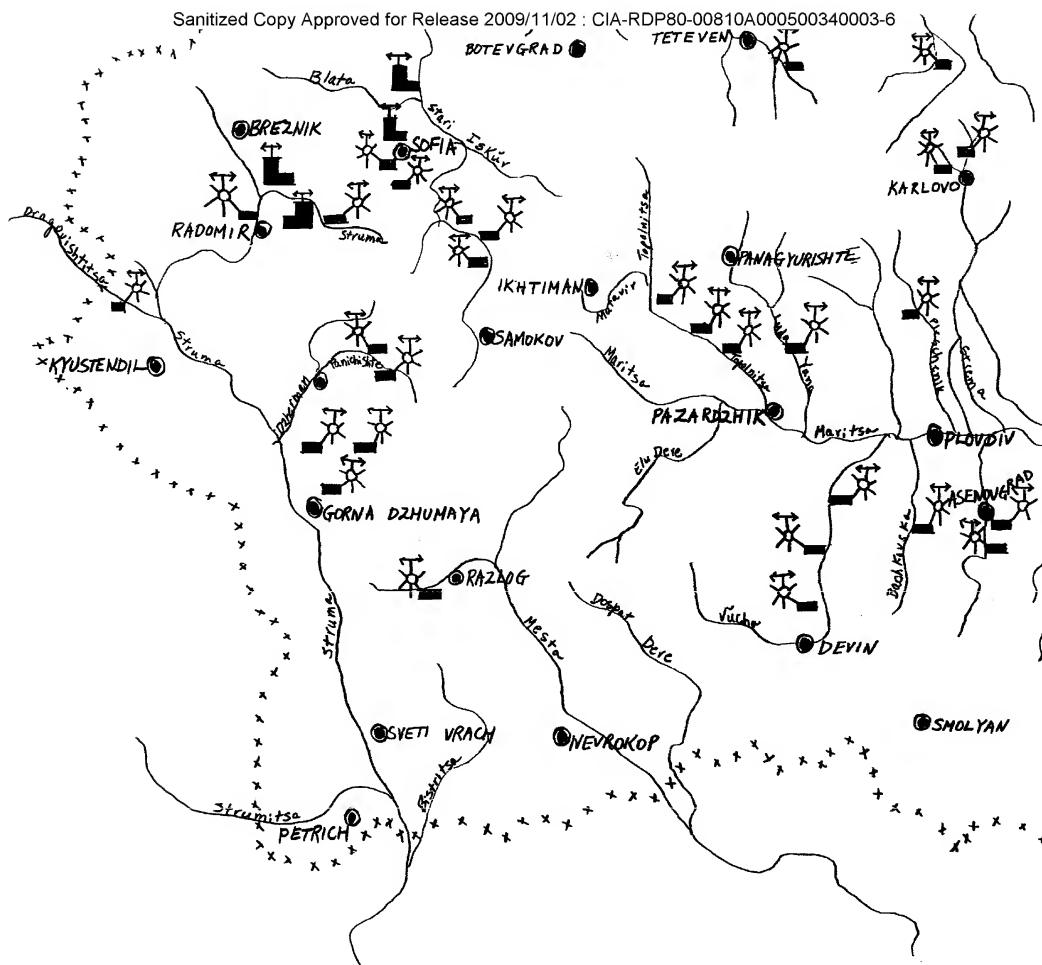
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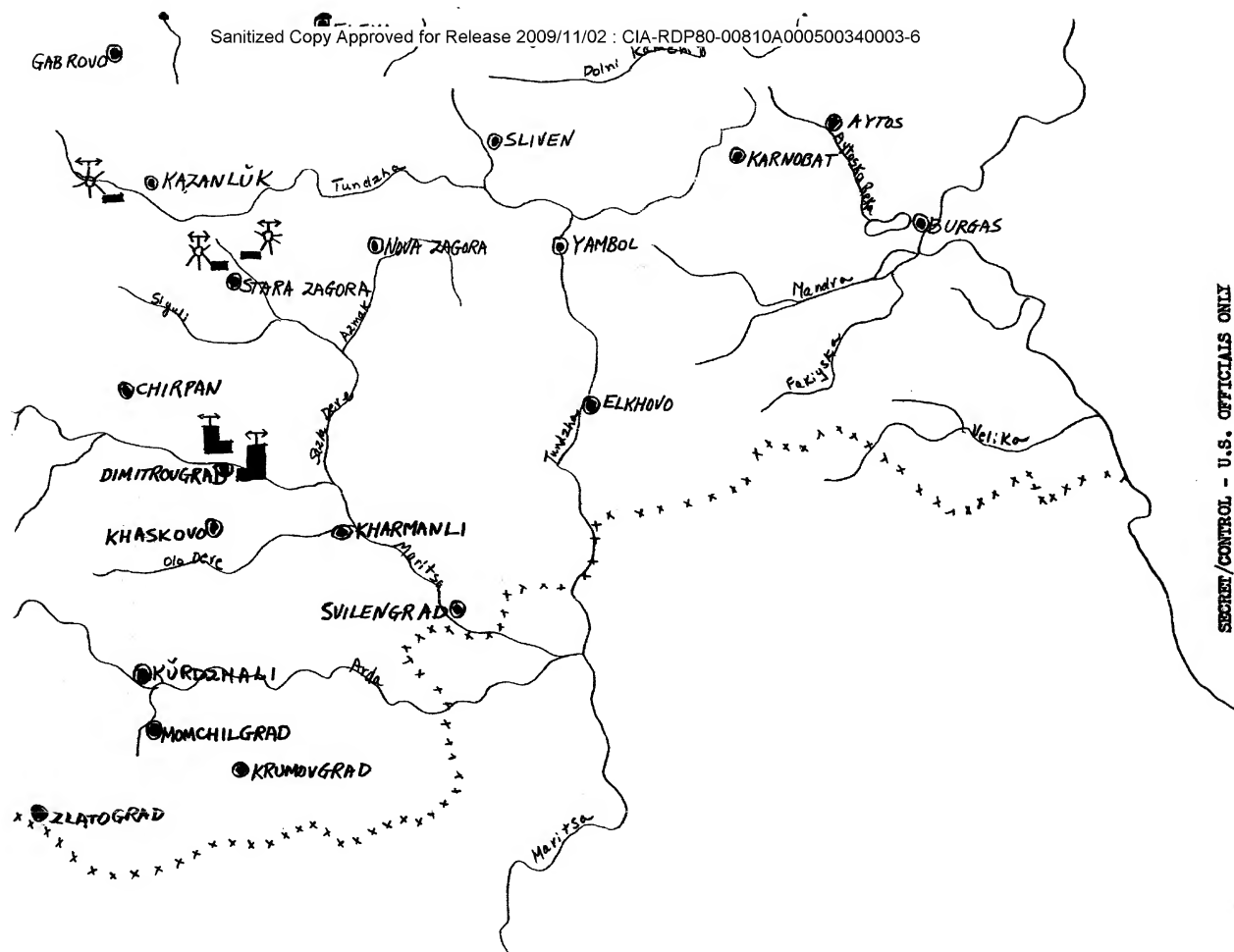
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APPENDIX A (Continued)

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APPENDIX A (Continued)

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## APPENDIX B

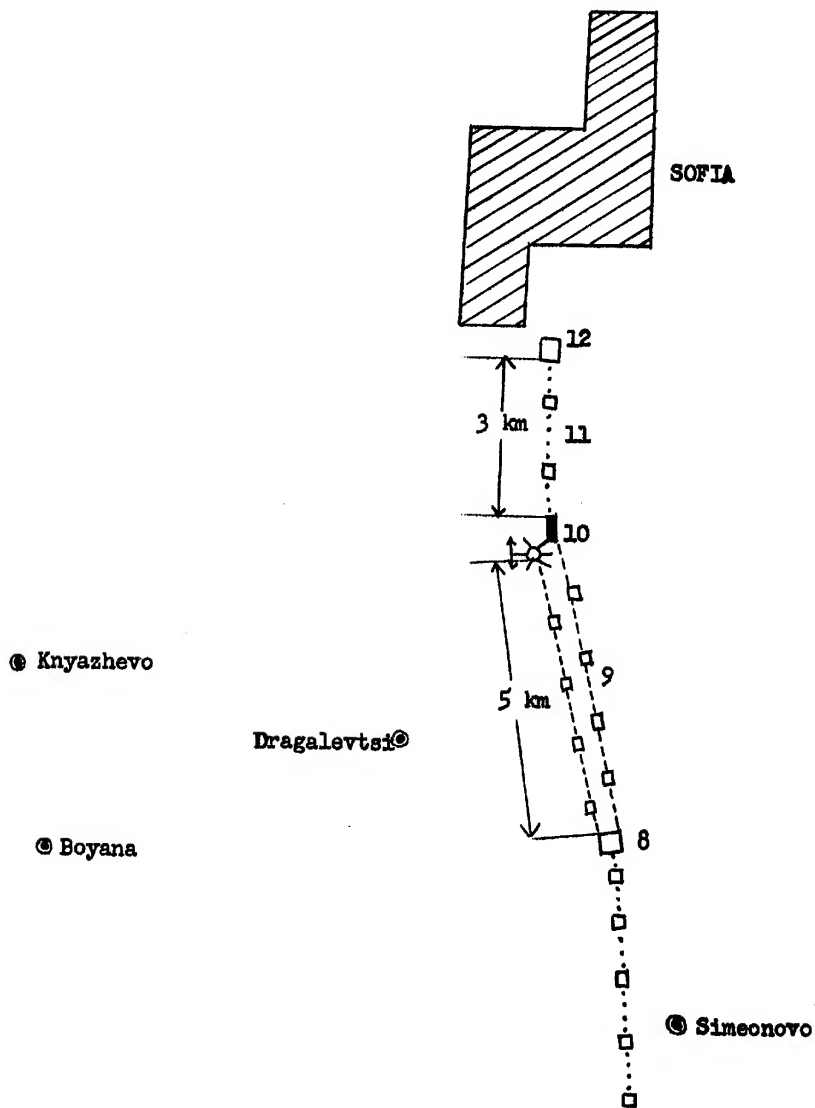
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Hydroelectric Plants in the Rila Planina  
To Sofia - 76 kilometersL E G E N D

1. Connecting conduits.
2. Artificial lake with dam.
3. Bed of Tsarska Bistritsa River.
4. I collecting tank.
5. Underground forced conduit.
6. I hydroelectric central.
7. Ordinary underground conduit.
8. II collecting tank.
9. Underground forced conduit.
10. II hydroelectric central.
11. Ordinary underground conduit.
12. Compensation tank and filter installation.

Assemble as follows:

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-55-
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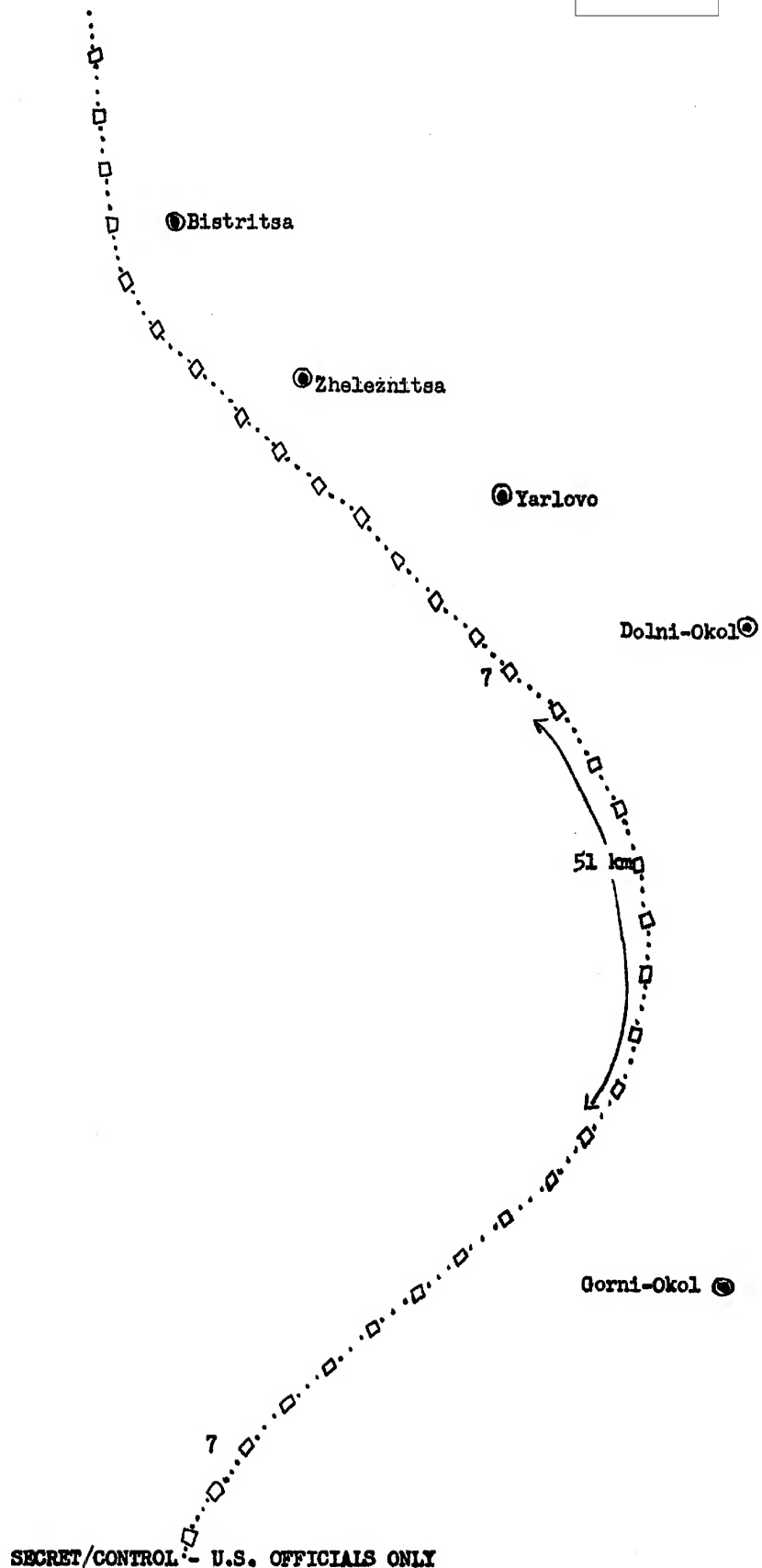


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APPENDIX B (Continued)

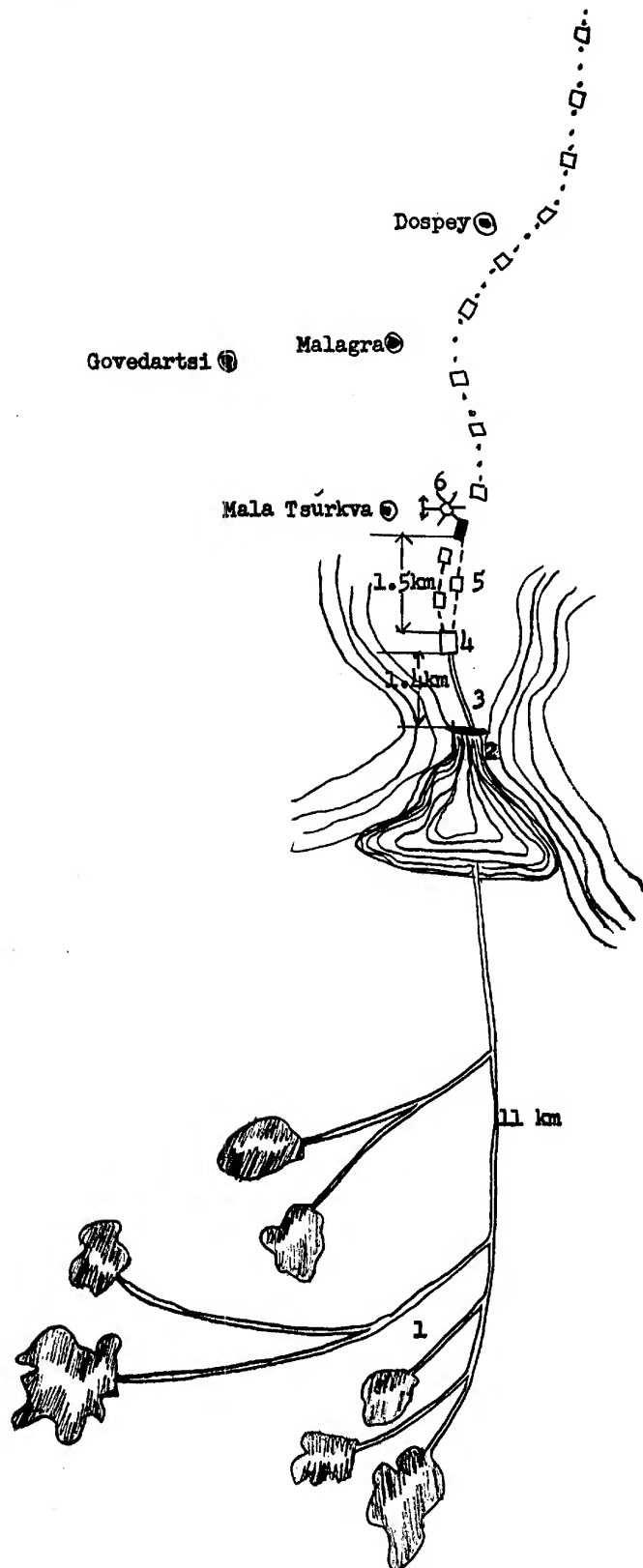
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APPENDIX B (Continued)

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